

## **TITLE 327 WATER POLLUTION CONTROL BOARD**

### **Proposed Rule** LSA Document #97-9

#### **DIGEST**

Adds new rule 327 IAC 2-11 to establish ground water quality standards in response to the requirements of the Ground Water Protection Act of 1989 (IC 13-18-17-5) that requires the Water Pollution Control Board (board) to adopt rules under IC 4-22-2 concerning ground water quality standards. Repeals 327 IAC 2-1-7 and 327 IAC 2-1.5-9. Effective 30 days after filing with the secretary of state.

#### **HISTORY**

First Notice of Comment Period: July 1, 1994, Indiana Register (17 IR 2467) and October 1, 1997, Indiana Register (21 IR 260).

Second Notice of Comment Period and Notice of First Hearing: April 1, 1999, Indiana Register (22 IR 2350).

Rescheduled Notice of First Hearing: June 1, 1999, Indiana Register (22 IR 2894).

Rescheduled Notice of First Hearing: August 1, 1999, Indiana Register (22 IR 3499).

Rescheduled Notice of First Hearing: September 1, 1999, Indiana Register (22 IR 3944).

Date of First Hearing: October 13, 1999.

Third Notice of Comment Period: January 1, 1999, Indiana Register (XX IR XXXX).

#### **PUBLIC COMMENTS UNDER IC 13-14-9-4.5**

IC 13-14-9-4.5 states that a board may not adopt a rule under IC 13-14-9 that is substantively different from the draft rule published under IC 13-14-9-4, until the board has conducted a third comment period that is at least twenty-one (21) days long.

#### **REQUEST FOR PUBLIC COMMENTS**

This proposed (preliminarily adopted) rule is substantively different from the draft rule published on April 1, 1999, at 22 IR 2350. The Indiana Department of Environmental Management (IDEM) is requesting comment on the entire proposed (preliminarily adopted) rule.

The proposed rule contains numerous changes from the draft rule that make the proposed rule so substantively different from the draft rule that public comment on the entire proposed rule is advisable. This notice requests the submission of comments on the entire proposed rule, including suggestions for specific amendments. These comments and the department's responses thereto will be presented to the board for its consideration at final adoption under IC 13-14-9-6. Mailed comments should be addressed to:

#97-9(WPCB) Ground water quality standards  
Kari Simonelic  
Rules Section, Chief  
Office of Water Management  
Indiana Department of Environmental Management  
P.O. Box 6015  
Indianapolis, IN 46206-6015

Hand delivered comments will be accepted by the IDEM receptionist on duty at the twelfth floor reception desk, Office of Water Management, Indiana Government Center-North, Room 1255, 100 North Senate Avenue, Indianapolis, Indiana.

## **COMMENT PERIOD DEADLINE**

Comments must be postmarked or hand delivered by January 21, 2000.

## **SUMMARY/RESPONSE TO COMMENTS FROM THE SECOND COMMENT PERIOD**

The Indiana Department of Environmental Management (IDEM) requested public comment from April 1, 1999, through April 30, 1999, on IDEM's draft rule language. IDEM received comments from the following parties:

American Electric Power (AEP)  
Baker Environmental, Inc. (Bak)  
Barnes & Thornburg (B&T)  
BP Amoco (BPA)  
Eli Lilly and Company (Eli)  
Hoosier Environmental Council (HEC)  
Indiana Chapter, National Solid Waste Management Association (NSWMA)  
Indiana Coal Council (ICC)  
Indiana Electric Utility, Solid Waste Work Group (IEU)  
Indiana Manufacturers Association (IMA)  
Indiana Steel Environmental Group (ISEG)  
Indianapolis, City of (INDI)  
Ispat Inland Inc. (III)  
NiSource (NiS)  
Mark E. Shere, Attorney, for Bethlehem Steel Corp. (Beth)  
U. S. Steel (USS)

Following is a summary of the comments received and IDEM's responses thereto:

*Comment:* The draft rule seems short sighted for the following reasons: (1) it does not incorporate a preventative approach by requiring a contaminant source to take steps to stop contaminating before the standards are exceeded; (2) the requirements of the ground water protection statute to "select targets for ground water cleanups" and "ban the discharge of effluents into potable water" are not achieved by the rule; (3) the numeric criteria contained in the rule could be used to allow degradation of ground water resources up to the level of the maximum contaminant level (MCL); (4) the rule makes no mention of aquifers (or water-bearing zones) which must be protected if the rule's laudable goal of protecting ground water is to be achieved; and (5) ground water resources not presently being used to supply drinking water may be needed in the future, but the rule through its definition of naturally limited class ground water is not protective of this class of ground water for future possible drinking water use. (HEC)

*Response:* IDEM believes the establishment of standards with a classification scheme and narrative and numeric criteria will prevent ground water contamination and protect future uses of ground water. The standards provide a framework for Indiana regulatory agencies and programs to manage the activities they regulate such that ground water receives the appropriate level of protection based on its classification. Note that the legislature changed the ground water protection statute and eliminated "to select targets for ground water cleanups" as a purpose for the standards during this rule development.

*Comment:* The proposed classification system of the draft rule is relatively simple yet consistent with both natural and human-derived impediments to aquifer use as drinking water. It is appropriate to exclude some aquifer types from regulation as drinking water class aquifers for a variety of exclusion criteria such as total dissolved solids concentration and poor aquifer yield. (USS)

*Response:* IDEM understands that, for the adequate and appropriate protection of ground water, recognizing the difference in the natural quantity and quality characteristics of ground water is necessary. The use of a classification scheme allows this.

*Comment:* The rule needs to be revised to reflect the provisions of Senate Engrossed Act 83 regarding how the rule will affect other agencies and House Bill 1919 regarding risk based decision-making being applicable to ground water remediation projects. (IMA, Eli)

*Response:* Governor O'Bannon signed Senate Engrossed Act 83 and House Bill 1919 after publication of the second notice of the rule. IDEM has revised the rule to reflect the provisions of Senate Engrossed Act 83 and House Bill 1919. Due to these changes, IDEM will issue a third notice on the rule.

*Comment:* IDEM should further evaluate the draft rule in light of the needs of small to large municipalities and consider its potential effect on (1) the protection of future drinking water supplies; (2) the development or redevelopment of properties in urban areas where pre-existing ground water impacts are evident; and (3) the carrying out of selected municipal activities such as road salt application. (INDI)

*Response:* IDEM believes the rule provides adequate protection of future drinking water supplies. The rule establishes narrative and numeric criteria for drinking water class water to protect its current and future use as drinking water. Additionally, the rule stipulates that the areas defined as supplying ground water to a community public drinking water supply (wellhead protection areas) not be classified as any class other than drinking water class. Furthermore, IDEM believes that nothing in the rule will prevent the development or redevelopment of properties in urban areas where pre-existing ground water impacts are evident. Separate from this rule, IDEM has programs, e.g., Risk Integrated System of Closure (RISC), Voluntary Remediation Program (VRP), Resource Conservation and Recovery Act (RCRA), that deal with ground water remediation issues, including how to handle the development or redevelopment of properties in urban areas where pre-existing ground water impacts are evident. While it is up to those programs to establish and implement procedures to address those issues, IDEM has included language in the rule to help ensure no interference or conflict with those programs' ability to do so. For example, IDEM has incorporated an impaired classification to recognize areas with ground water contamination to help facilitate remediation, when appropriate. Additionally, in response to Senate Engrossed Act 83, IDEM has revised the rule to make it clear that an agency is to develop rules to implement these standards at the facilities they regulate.

*Comment:* The rule applicability should be expanded to all regulated activities that may contaminate ground water, not just those administered by Indiana agencies, because Indiana does not have primacy for some Federal programs that regulate ground water contamination (such as Class V underground injection wells). Under the Class V UIC regulations, an operator may inject fluids in a wellhead protection area up to the MCL or to a point that would not adversely affect human health. To only require an operator to meet MCLs in the discharge to an aquifer in a wellhead protection area that has no detectable concentration of a constituent with an MCL or other health-based standard is to allow degradation of that aquifer and higher costs for the water utility to treat the water prior to distribution to consumers. (NiS)

*Response:* The enabling legislation for ground water quality standards, IC 13-18-17-5, limits the applicability to the five agencies listed in the rule. However, IDEM believes that once the Water Pollution Control Board (WPCB) establishes ground water quality standards, other agencies, including the United States Environmental Protection Agency (EPA), may use them in making decisions that may affect ground water quality in Indiana.

*Comment:* The rule's applicability section cannot achieve the stated goal of protecting ground water if the rule is not applicable to all ground water. Section 2 needs to read: "The standards established in this rule apply to all ground water of the state and activities regulated by the following agencies:". If the rule's applicability were clearly stated that standards apply to all ground water, not

just to specific activities, then implementation would be much more straight forward and could be placed at the discretion of the various agencies with more confidence. (HEC)

*Response:* IDEM believes that the rule does protect all ground water. With the rule, all ground water will be classified and, once classified, protected by the narrative and numeric criteria. Each of the five (5) agencies listed in the rule will establish how it will apply the standards to the activities it regulates.

*Comment:* The term “activities regulated” used in section 2(a) needs to be described in more detail for each agency so it is clear where the regulations apply and how they will be used. (NiS)

*Response:* IDEM changed the language in this section to reflect the changes made to the ground water protection statute. Each of the five (5) agencies listed in the rule will establish how it will apply the standards to the activities it regulates. IDEM does not have the statutory authority to specify how other agencies should apply the standards.

*Comment:* Section 2 concerning applicability of the rule needs to be made more clear with regard to implementation by adding a subsection (d) to mirror IDEM's explanation given in the second notice request for public comments. The following language is suggested to provide clarity: “The ground water standards identified in this rule are not self implementing. A specific activity will become subject to these standards upon the adoption of rules, permit requirements, or other formal implementation of these standards by an agency listed in subsection (a). (IMA, B&T, Beth, Eli, ISEG)

*Response:* IDEM has revised the applicability section of the rule to reflect the provisions of Senate Engrossed Act 83 which changed the wording of the enabling legislation for ground water quality standards, IC 13-18-17-5, to say: “...agencies shall adopt rules under IC 4-22-2 to apply the ground water quality standards. . .”.

*Comment:* In order to demonstrate the flexibility of the rule and its usefulness to serve various programs, additional guidance should be provided concerning how the rule will be implemented and interpreted. (INDI)

*Response:* Each of the five (5) agencies listed in the rule will establish how it will apply the standards to the activities it regulates. With applicability established, the agencies may develop guidance concerning how they will implement and interpret the rule. Individual agencies will decide the necessity for guidance.

*Comment:* The language of section 2 concerning applicability should remain consistent with statutory authority. (BPA)

*Response:* IDEM has revised the applicability section of the rule to reflect the provisions of Senate Engrossed Act 83 to remain consistent with the enabling legislation for ground water quality standards, IC 13-18-17-5, which provides the statutory authority for the rule.

*Comment:* Section 2 (b) merely repeats the five (5) purposes listed in the ground water statute and, by placing them in the rule, adds no clarity but could create confusion potentially causing conflicts with implementing this rule; therefore, they should be deleted. (IEU)

*Response:* To ensure consistency with the statute, IDEM believes that restating the purposes established by the ground water statute is appropriate. Note that the legislature changed the ground water protection statute and eliminated “to select targets for ground water cleanups” as a purpose for the standards during this rule development.

*Comment:* A ban on the discharge of effluents into potable ground water, as stated in section 2(b)(3), would effectively stop or lead to additional costs for water control or treatment in association with dewatering activities at a variety of projects where ground water is discharged to and subsequently infiltrates to land overlying a drinking water class aquifer. This restriction should be deleted from the rule. (NiS)

*Response:* IC 13-18-17-5, which provides the statutory authority for the rule, establishes purposes for the rule including: “To ban the discharge of effluents into potable ground water.” As it is a statutory requirement, IDEM believes that restating it as a purpose in the rule is appropriate.

*Comment:* The Water Pollution Control Board has statutory authority to ban the discharge of effluents to potable water supplies, and to implement this authority, the rule needs to involve more than simply classifying ground water and developing numeric and narrative criteria. An implementation procedure is needed in the rule to provide for the protection of ground water resources. (HEC)

*Response:* Each of the five (5) agencies listed in the rule will establish implementation procedures for applying the standards to its regulated activities to ensure protection of ground water resources. To be consistent with the statute, these procedures must effectively ban the discharge of effluents to potable water supplies.

*Comment:* The rule gives decision making authority only to the commissioner of the Indiana Department of Environmental Management (IDEM) but is unclear whether the IDEM commissioner has authority for activities regulated by other state agencies. This should be clarified in the rule. (IEU, NiS)

*Response:* IDEM has revised the applicability section of the rule to reflect the provisions of Senate Engrossed Act 83 which changed the wording of the enabling legislation for ground water quality standards, IC 13-18-17-5, clarifying that agencies must adopt rules to apply the ground water quality standards. Additionally, IDEM expanded the decision making authority, under the provisions of the rule where it was appropriate, to “an agency” rather than “the commissioner.”

*Comment:* The rule sets the stage for five (5) different agencies to make judgements in the future about whether and how activities should be controlled to meet the standards. It is important that the new standards do not conflict with ground water cleanup standards that have already been negotiated and, in some cases, are already being implemented under existing corrective action programs. (ISEG)

*Response:* IDEM made considerable effort to ensure that the standards “fit” with the appropriate remediation programs. IDEM has revised the applicability section of the rule to reflect the provisions of Senate Engrossed Act 83 which changed the wording of the enabling legislation for ground water quality standards, IC 13-18-17-5, and eliminated the purpose: “To select targets for ground water cleanups.” Additionally, language from House Enrolled Act 1919 that revised IC 13-12-3 was incorporated into the rule. The rule now says: “The standards established in this rule shall allow, as appropriate, ground water remediations to be consistent with the remediation objectives set forth in IC 13-25-5-8.5.” Generally, the appropriate remediation program will establish cleanup numbers. IDEM has included language in the rule to help ensure no interference or conflict with those programs’ ability to do so.

*Comment:* The definition of “contaminant” should be modified by the removal of the words “or any odor” because odors can be naturally occurring and subjective in detection. (Bak, BPA)

*Response:* The definition of “contaminant” used in the rule is the statutory definition of “contaminant” found at IC 13-11-2-42; therefore, IDEM does not believe it is appropriate to narrow the definition.

*Comment:* The definition for “contaminant” should be: “any chemical that is directly introduced into ground water by human activity or that migrates to ground water from areas of human activity.” (NSWMA)

*Response:* The definition of “contaminant” used in the rule is the statutory definition found at IC 13-11-2-42; therefore, IDEM does not believe it is appropriate to narrow the definition.

*Comment:* The definition of “contaminant” is too expansive and could be interpreted to include many substances normally considered innocuous since most substances in sufficient quantity can be injurious to human health and plant or animal life or property. (NiS)

*Response:* The definition of “contaminant” used in the rule is the statutory definition found at IC 13-11-2-42; therefore, IDEM does not believe it is appropriate to narrow the definition.

*Comment:* The rule needs a clear definition of what constitutes a contaminant concentration that poses a threat to human health or has no adverse impact to the environment for situations

without a drinking water class numeric criterion. (INDI)

*Response:* The contaminant concentration that poses a threat to human health or has no adverse impact to the environment will vary depending on the contaminant and site involved. To account for this variability and ensure adequate protection, the rule requires a risk analysis be done to establish a numeric criterion for those contaminants that do not have a specific numeric criterion listed in the rule.

*Comment:* The word “point” in the definition of “contaminant source” should be replaced by “facility” or “activity” to allow the perimeter of standard application to be more accurately drawn with reference to potential contaminant sources that cover a broad area rather than originating at a single point. (IMA, Eli, ISEG)

*Response:* IDEM included the definition of “contaminant source” in the second notice draft to help define the location of standards application. However, since the concept of the location of standards application was refined and replaced with the establishment of a ground water management zone, which the rule delegates to different regulatory programs, the given definition was not necessary, so IDEM deleted it from the rule.

*Comment:* The definition of “drinking water well” should not include the reference to “other household uses” as it is not pertinent. (BPA, NiS)

*Response:* IDEM included the reference to “other household uses” to recognize that people use their drinking water not only for drinking, but for showering, cleaning, watering, etc. and thus, are exposed to their drinking water in ways other than ingestion. However, to capture this concept, IDEM revised the rule to say: “Supplies ground water for human consumption.”

*Comment:* A definition should be added to the rule for “effectively isolated” or “effective isolation” that reads as follows: “Effectively isolated” or “effective isolation” means the physical separation of ground water in two (2) different geologic strata by a low-permeable geologic stratum with a minimum thickness of five (5) feet and a maximum average permeability of  $1 \times 10^{-7}$  cm/sec. This definition extends to ground water separated by discontinuities, as for example, by an incised valley. This definition also includes ground water that exists in a geologic stratum that has a maximum average permeability of  $1 \times 10^{-7}$  cm/sec. (NSWMA)

*Response:* IDEM removed the specific reference to “effective isolation” from the rule.

*Comment:* The definition of “ground water” should be “water that completely occupies the voids in a geologic stratum. This portion of the geologic stratum is also called the saturated zone. Water that partially occupies the voids in a geologic stratum in combination with air (that is in the unsaturated zone in the geologic stratum) is not included in this definition.” (NSWMA)

*Response:* IDEM has changed the definition of ground water to: “water located below the ground surface in interconnected voids and pore spaces in the zone of saturation.”

*Comment:* The definition of “karst” should not be limited to sites with characteristic physiographic features. Add the words “but not limited to” after “or subterranean features including,” and expand the list of features to include joints and underground voids. (HEC)

*Response:* The term “karst” is no longer used in the rule; therefore, IDEM deleted the definition.

*Comment:* The definition of “naturally occurring concentration” should not include the language of clause (A) referring to human-made materials such as solid waste, as defined by IC 13-11-2-205, or hazardous waste, as defined by IC 13-11-2-99, but should include slag and foundry sand with the language of existing clause (B). (IMA, Bak, BPA, Eli, ISEG)

*Response:* IDEM changed the definition of “naturally occurring concentration” to: “a constituent concentration in ground water that is not attributable to human activity.” This definition disallows the consideration as naturally occurring, any contaminant concentration resulting from solid or hazardous waste, slag, foundry sand, or coal mining. IDEM believes that considering solid or hazardous waste, slag, foundry sand, or coal processing waste, as formation material that contributes to a naturally occurring concentration is not appropriate. IDEM believes the rule

provides ways to deal with elevated concentration levels in ground water resulting from the past disposal practices of solid or hazardous waste, slag, foundry sand, and coal processing waste. For example, one may classify ground water as impaired class ground water, if appropriate.

*Comment:* The definition of “naturally occurring concentration” should not limit formation materials to spoils deposited from coal mining activities but should refer in clause (B) of the definition to material that is attributable to coal mining activities regulated under IC 14-34. To limit the definition as the rule presently is worded would make it necessary to attempt to isolate the contaminant concentrations due to spoil from those due to coal processing waste or other materials legally disposed of in the mine excavations. (ICC)

*Response:* IDEM changed the definition of “naturally occurring concentration” and the definition now precludes the consideration of spoil or any coal processing waste as fill material that may become a formation material after a mining site is closed according to IC 14-34. The agency with jurisdiction over a facility, in this case, the Indiana Department of Natural Resources (IDNR), will determine the appropriate actions to be taken to meet the standards when coal processing waste is disposed of at a mine site.

*Comment:* The definition of “naturally occurring concentration” should exclude spoils deposited from coal mining activities from formation materials. Mine spoils have been placed in areas that have in the past and could produce drinking water from wells if the ground water were not allowed to be contaminated. (HEC)

*Response:* IDEM changed the definition of “naturally occurring concentration” and the definition now precludes the consideration of spoil or any coal processing waste as fill material that may become a formation material.

*Comment:* The reference to 327 IAC 2-1.5 in the definition of “surface water quality standards” should be eliminated. (IMA, Eli, ISEG)

*Response:* 327 IAC 2-1.5 is the citation for the surface water quality standards applicable to all state waters within the Great Lakes system. Ground water affecting surface water in the Great Lakes system should comply with these standards.

*Comment:* The current draft rule does not achieve the regulatory goal in the least restrictive manner to minimize expenses to regulated entities as required by IC 4-22-2-19.5. The rule should include the definition of “constituents of concern” that was in a former draft version of the rule and read as follows: ““Constituents of concern” means those constituents, pursuant to 40 CFR Part 264 Appendix IX, stored or used, now or in the past, by a facility, practice or activity or any constituent determined by the Commissioner to have potential risk to human health.” (AEP, IEU)

*Response:* The definition of “contaminant” used in the rule is the statutory definition found at IC 13-11-2-42. Each of the five (5) agencies listed in the rule will establish implementation procedures, including the determination of appropriate “contaminants of concern” for the activities it regulates.

*Comment:* Section 4 concerning ground water classification would enable corporations to buy large blocks of land in southern Indiana and pollute them. (HEC)

*Response:* The classification system recognizes existing quantity and quality characteristics that may limit the use of some ground water. Each class of water is subject to all the narrative criteria of the rule and most ground water is subject to class specific numeric criteria established to protect the existing and reasonably expected future use of the water.

*Comment:* The section 4(a) standard for drinking water class ground water would be sufficiently protective if preventative action levels (PALs) were included in the rule. Otherwise, without PALs, it would be useful to have a sole source aquifer category where these provisions apply and cleanups would be required to achieve background levels. (HEC)

*Response:* The EPA designed the sole source aquifer designation program as a planning tool to allow special consideration of aquifers that supply over half a given population’s drinking water. The program is administered by the EPA who has designated only one (1) Indiana aquifer, the St.

Joseph aquifer in Elkhart County, as sole source. Since this designation, Indiana has developed its wellhead protection program that protects the drinking water that supplies community public water systems, including those in Elkhart County. The rule recognizes the importance of protecting these drinking water supplies and stipulates that wellhead protection areas not be classified as any class other than drinking water class.

*Comment:* The words “by the commissioner” should be deleted from both section 4(a) and 4(b). In the final words of section 4(a) “according to subsections (b) and (c)” should be substituted with “according to subsections (b) or (c).” The phrase “in the geologic stratum of concern” should be inserted into section 4(b)(1)(A) following “the absence of any drinking water wells.” (NSWMA)

*Response:* To ensure consistency in classification, a single authority needs to retain oversight of designations. The rule identifies the commissioner of IDEM as the person authorizing ground water classifications.

*Comment:* Section 4(b)(1)(A) should be modified to clarify if the ground water is being used for drinking water by rewording as follows: “The absence of any drinking water wells within a one (1) mile radius of the facility, practice, or activity within the hydrostratigraphic zone of interest.”. (INDI)

*Response:* IDEM changed the language of the rule which now says that the commissioner may classify ground water as naturally limited or impaired if it is “not currently used nor reasonably expected to be used for drinking water in the future.” The person requesting the naturally limited or impaired classification must provide appropriate information to show that the ground water is not used for drinking water. What information is appropriate is site-specific; therefore, IDEM was not prescriptive in the requirements for the demonstration.

*Comment:* Sections 4(b) and 4(c) should be reworded by exchanging “may” with “shall” to avoid implying that the commissioner's approval must be obtained before ground water can be classified as naturally limited or impacted drinking water class ground water. (NiS)

*Response:* The intent of the rule is to make the commissioner's approval a requirement for a ground water classification other than the default drinking water class and ground water that automatically qualifies as naturally limited. This requirement should help ensure consistency and fairness in classification.

*Comment:* In classifying ground water as naturally limited class ground water due to its “effective isolation of the ground water from drinking water class ground water” as provided by section 4(b)(1)(B), no guidance is given on how to make the determination of effective isolation. The rule needs a determinable standard such as hydrogeological concepts of hydraulic conductivity, time of travel, and formation structure to ascertain effective isolation. (BPA, IEU, NiS, INDI)

*Response:* IDEM removed the specific reference to “effective isolation” from the rule. However, IDEM has captured the concept in the language of the rule by changing it to say that the commissioner may classify ground water as naturally limited or impaired if it is “not currently used nor reasonably expected to be used for drinking water in the future.” The person requesting the naturally limited or impaired classification must provide appropriate information to show that the ground water is not used for drinking water. What information is appropriate is site-specific; therefore, IDEM was not prescriptive in the requirements for the demonstration.

*Comment:* The language of section 4(b) is overly restrictive by requiring an aquifer to be both isolated from use and unsuitable for use to qualify for the naturally limited classification. It should be sufficient to show that the aquifer is naturally limited if it meets just one (1) of the listed requirements. To relax the language of section 4(b) would not be inconsistent with section 5(c) or section 7(c), both of which have performance standards for the protection of ground water and human health. (USS)

*Response:* IDEM believes that ground water generally recognized as being unsuitable for drinking water does not ensure that it is not or will not be used for drinking water purposes. In portions of the state, where large quantities of high quality water are not easily accessible, lower



quality water is used as drinking water.

*Comment:* The two hundred (200) gallon per day (gpd) potential yield stated in section 4(b)(3)(A) is not reasonable or workable. (IMA, Eli)

*Response:* IDEM took the two hundred (200) gallon per day potential yield from an EPA guidance describing the average daily water use at a single family home.

*Comment:* It is short sighted to base naturally limited class drinking water on a limited ability to supply water. Low yielding aquifers are often used in combination with other low yielding aquifers to supply household uses, and to allow them to be contaminated is to deny their usefulness. (HEC)

*Response:* The classification is set up so ground water used for drinking water, including “the combined use of multiple low yield water bearing zones,” cannot be classified as naturally limited.

*Comment:* In addition to yield and naturally occurring total dissolved solids as the only criteria by which ground water could be classified as naturally limited as provided by section 4 (b)(3)(A) and 4 (b)(3)(B), the rule should include other possible natural conditions, such as depth, location, or the concentration of a naturally occurring constituent, that could cause ground water not to meet drinking water quality. (BPA)

*Response:* Some activity based, automatic qualifications for naturally limited were added to the rule. For example, ground water is automatically classified as naturally limited if it is in the injection zone of a permitted Class I, II, or III injection well. Other than those automatic qualifiers, IDEM believes that allowing a naturally limited classification based on the depth or location would preclude the development of drinking water supplies that will become viable (considering changing technology and the growing water supply needs of the citizens of the state) in the future. When a naturally occurring constituent concentration exists in ground water above the established health protective numeric criterion, the naturally occurring constituent concentration becomes the numeric criterion applied to that ground water.

*Comment:* The criterion for total dissolved solids (TDS) is set, in table 6(b), at five hundred (500) milligrams per liter; however, the criterion for a naturally limited class ground water, described by section 4(b)(3)(B), is set at three thousand (3,000) milligrams per liter. If the EPA secondary maximum contaminant level of five hundred (500) milligrams per liter is to be maintained as a criterion the definition for a naturally limited class ground water should be set at greater than five hundred (500) milligrams per liter total dissolved solids. (USS)

*Response:* IDEM changed the TDS qualification criterion for a naturally limited class ground water to ten thousand (10,000) milligrams per liter to recognize the EPA’s definition of an underground source of drinking water. The concentration of five hundred (500) mg/l TDS is now a criterion that applies as a health protective goal for drinking water wells. In drinking water class water that is not in a drinking water well, the rule applies the concentration of five hundred (500) mg/l TDS as an indicator level. IDEM believes applying the concentration of five hundred (500) mg/l TDS in this way is appropriate to maintain the ground water for use as drinking water. IDEM does not believe that classifying ground water within the range of five hundred (500) mg/l TDS and ten thousand (10,000) mg/l TDS as naturally limited is appropriate because ground water within the range of five hundred (500) mg/l TDS and ten thousand (10,000) mg/l TDS can be treated for drinking water use.

*Comment:* The classification scheme to define naturally limited water as that having greater than three thousand (3000) milligrams per liter of total dissolved solids is short sighted in that it would allow contamination of water supplies that may be needed in the future and could be used as drinking water because, with technology that is currently available and getting cheaper all the time, water with such levels of dissolved solids can be cleaned up to drinking water specifications. The standard of the rule for naturally limited class ground water should read: “Ground water should be classified as naturally limited class ground water only if total dissolved solids exceed ten thousand (10,000) milligrams per liter.”. If yield remains a condition of the rule for specifying naturally

limited class ground water, then the conditions for pumping one hundred fifty (150) gpd must be specified; otherwise, unscrupulous individuals will demonstrate that ground water is naturally limited due to low yields by using unreasonable assumptions, such as sampling only a very thin aquifer or using a small diameter well or equivalent modeling assumptions that could lead to declaring a ground water supply naturally limited when in fact it is quite useful. Also, a laboratory test for hydraulic conductivity should not be sufficient to classify an aquifer as naturally limited as such tests routinely show hydraulic conductivity to be ten (10) to one thousand (1000) fold lower than field tests. (HEC)

*Response:* IDEM changed the TDS qualification criterion for a naturally limited class ground water to ten thousand (10,000) milligrams per liter to recognize EPA's definition of an underground source of drinking water. Additionally, the rule establishes five hundred (500) mg/l TDS as a health protective goal for ground water in drinking water wells, and an indicator for all drinking water class water. If necessary, IDEM will develop separate guidance for defining an adequate and appropriate demonstration of a yield less than two hundred (200) gpd.

*Comment:* The impacted drinking water ground water classification of section 4(c) is an appropriate response to issues that currently exist in Indiana and that are likely to persist in the future. The protections defined in this subsection (c) are protective and reasonable. (USS)

*Response:* IDEM believes that including an impaired (formerly known as impacted) class is appropriate to address the issues of existing contamination in Indiana that is likely to persist in the future.

*Comment:* The language of section 4(c) concerning ground water not meeting the criteria for naturally limited class ground water includes a limiting factor "if humans are not exposed to it" which should be replaced with "if humans do not ingest it" in order to avoid an absolute standard that could unnecessarily limit insignificant dermal contact that might not pose a health based risk. (IMA, BPA, Eli, ISEG)

*Response:* IDEM moved and incorporated this concept into the goal of the rule which says: "The goal of this rule is to maintain and protect the quality of Indiana's ground water to ensure that exposure to the ground water will not pose a threat to human health, any natural resource, or the environment.". This language ensures consideration of any threatening exposure, whether it is through ingestion, inhalation, or dermal contact.

*Comment:* In the case of an industrial site or a site under remediation, it does not make sense to prohibit the classification from being impacted because humans are exposed to it as the language of section 4(c) requires. The language of section 4(b)(1) should be substituted for the requirement that humans not be exposed to the ground water as the first criteria for classification as impacted class ground water. An additional condition for classifying ground water as impacted class ground water should include: ground water, unsuitable for use as drinking water because of irreversible man-induced conditions that came into existence prior to July 1, 1999. (III)

*Response:* The commissioner classifies ground water as impaired (formerly known as impacted) based on many factors not just that it is contaminated. IDEM believes that preventing exposure to contaminated ground water is important. IDEM changed the qualifications for an impaired classification to specifically address ingestion exposure and to allow the commissioner to classify ground water as impaired if it is not currently used nor reasonably expected to be used for drinking water in the future unless it is treated to remove the contamination. To help prevent exposure to contaminated ground water through pathways other than ingestion, the goal of the rule now says: "The goal of this rule is to maintain and protect the quality of Indiana's ground water to ensure that exposure to the ground water will not pose a threat to human health, any natural resource, or the environment.". This language ensures consideration of any threatening exposure, whether it is through ingestion, inhalation, or dermal contact.

*Comment:* The term "impacted drinking water class ground water" used in section 4(c) is confusing since impacted ground water is prohibited for use as drinking water. The term should be

substituted with “impacted ground water”, and the rule should address how impacted ground water can be reclassified as drinking water if required remedial activities or natural attenuation ultimately restore impacted ground water to drinking water class ground water. (BPA, III)

*Response:* IDEM used the term “impaired (formerly “impacted”) drinking water class ground water” to recognize that the water in this class was, in the past, drinking water class quality and may, in the future, return to drinking water class quality.

*Comment:* The term “impacted drinking water class ground water” used in section 4(c) should be called “contaminated drinking water so the citizens of Indiana can understand the regulation. It would be useful to have a “historically contaminated drinking water class and a class for ground water that has been “recently contaminated with cleanup required” because these should have different cleanup requirements. Contamination that takes place now should be cleaned up to background levels; for historical contamination, it may be appropriate to seek closure without cleanup. (HEC)

*Response:* IDEM used the term “impaired (formerly “impacted”) drinking water class ground water” to recognize that the water in this class was, in the past, drinking water class quality and may, in the future, return to drinking water class quality. The number and type of classes of ground water and their qualifiers were determined based on many discussions with many stakeholders. IDEM believes that the three (3) classes established in the rule are adequate to address the ground water quality issues that exist in Indiana.

*Comment:* The words “or coal combustion byproducts” should be added to section 4(c)(1)(A) after “slag and foundry sands.” (IEU)

*Response:* IDEM rewrote section 4(c) to address several concerns. Historical contamination not caused by the unlawful action of the person seeking the impaired drinking water classification may not prohibit receiving the classification if the other conditions of the class are met.

*Comment:* The language of section 4(c)(2)(A) should be changed from “Managed in compliance with applicable remediation laws.” to “Managed in compliance with remediation laws, if applicable.”. (IMA, BPA, Eli)

*Response:* IDEM rewrote section 4(c) to address several concerns. IDEM removed the language: “Managed in compliance with applicable remediation laws.”.

*Comment:* The language of section 4(c)(2)(A) should be deleted from the rule because it is both too vague and too prescriptive. There are too many laws that can apply, and it directs activities by other agencies contrary to IDEM's stance that implementation decisions are the responsibility of the regulatory programs. (IEU)

*Response:* The language of section 4(c)(2)(A): “Managed in compliance with applicable remediation laws.” was removed.

*Comment:* A new subsection (d) should be added to section 4 to read as follows: “Ground water in a formation being used as part of a permitted, Class I underground injection activity is not classified for purposes of this rule.”. (IMA, Bak, Beth, Eli, ISEG)

*Response:* IDEM understands that the EPA rigorously regulates injection activity and, therefore, believes that a recognition of this fact in the rule language is appropriate. Ground water in a permitted Class I well injection zone now automatically qualifies for a naturally limited classification.

*Comment:* While in support of the draft rule's three (3) ground water classifications, additional classifications would not be useful and likely make the rule overly complicated. However, the rule should include reference to the Voluntary Remediation Program (VRP), particularly, section 8.5 thereof to provide guidance regarding the criteria to be used in making classification decisions. The impacted drinking water class ground water is not consistent with the VRP statute or with true risk-based decision making required by the VRP statute. The question should not be whether the ground water has already been impacted but rather what should be a rational exposure scenario. What is really needed is the opportunity to establish a commercial/industrial classification scheme

not based on whether ground water is impacted, but on the current or reasonably foreseeable land use and environmental exposure for that area. The ground water rule should change the impacted class to a commercial/industrial class and follow the science of risk and evolving guidance (including EPA guidance on evaluating future land uses) to be consistent with RISC, with the science of risk, and with existing law. (B&T)

*Response:* IDEM has designed the classification system to classify ground water to ensure ground water quality is maintained and protected. IDEM does not believe that this rule is the appropriate place to establish land use qualifications. The relationship between land use and ground water quality is not clear. To provide consistency with the VRP statute, the rule now says: “The standards established in this rule shall allow, as appropriate, ground water remediations to be consistent with the remediation objectives set forth in IC 13-25-5-8.5.”. Generally, cleanup numbers will be established by the appropriate remediation program. IDEM has included language in the rule to help ensure no interference or conflict with those programs’ ability to do so.

*Comment:* Section 5(b) constitutes an extremely strict antidegradation rule. As written, at a minimum, no element or elemental compound can be discharged to the ground water in concentrations greater than those that are already present. The following replacement language is suggested: “Existing ground water quality, as it relates to the parameters listed under 327 IAC 2-11-6(a) and 327 IAC 2-11-6(b) and parameters that pose a threat to human health, shall, at a minimum, be maintained to protect the existing uses.” (IEU, ISEG)

*Response:* IDEM believes that, although this narrative is an antidegradation criterion, it does not prohibit every discharge to ground water. The prohibition is only to those discharges that eliminate a viable use of ground water. IDEM believes that the classification plan helps define a viable use of ground water.

*Comment:* Section 5(b) should be worded so that ground water quality is maintained and protected based on its existing use. (NiS)

*Response:* IDEM believes that limiting the maintenance and protection of ground water quality based only on its existing use will allow the degradation of the resource thereby diminishing its viability for future use. IDEM believes that this would not be appropriate.

*Comment:* It is not sufficient for the rule to protect existing uses of ground water. A rule requirement to protect ground water uses without the inclusion of PALs and clear applicability is meaningless because it will be unenforceable. Section 5(b), as worded, would allow degradation of ground water quality to the point of meeting the maximum contaminant level. Rule language to protect existing and potential future uses might be sufficient if applicability were defined to include all potable waters and if preventative action levels were specified and enforced. (HEC)

*Response:* The rule includes the narrative criterion that “ground water quality shall be maintained, at a minimum, to protect the existing and reasonably expected future use of the ground water.”. Additionally, the rule now says: “An agency shall use its regulatory authority, when adopting rules, to ensure the criteria established in this rule will not be exceeded in ground water. . . . When adopting rules, an agency may . . . apply preventative action levels, design standards, a monitoring framework, or other regulatory methods to ensure that facilities, practices, and activities are designed and managed to eliminate or minimize potential adverse impacts to the existing ground water quality.”. In ensuring that the criteria are met, an agency may employ preventative action levels or other tools it deems adequate to prevent contamination of ground water aquifers.

*Comment:* The language of section 5(c) should be reworded to emphasize the goal of protecting residential systems and the basic guideline to not exceed the health-based criteria of section 6. The suggested rewording would read as follows: “Ground water shall be maintained and protected to ensure that contaminant concentrations in a residential drinking water well that has contaminant concentrations less than the numeric criteria established in section 6 of this rule for drinking water class ground water shall not exceed the criteria established in section 6.”. (IMA, Eli, ISEG)

*Response:* IDEM changed the language to: “Ground water shall be maintained and protected to ensure that a contaminant concentration attributable to human activity does not increase in a drinking water well.”. IDEM believes applying a non-degradation approach to ground water used as drinking water is appropriate. Allowing degradation up to the numeric criteria shifts the burden of maintaining and protecting the ground water from those that may contaminate, to those that use the water. IDEM believes such an allowance is inappropriate.

*Comment:* Section 5(c) needs to take into consideration the variability of ground water. A moving average or appropriate statistical test should be used to determine if contamination is occurring. (IEU)

*Response:* IDEM agrees and anticipates that, as an agency establishes how it will implement these standards through rules, it will take into consideration the variability of ground water.

*Comment:* The antidegradation language included in section 5(c) should be eliminated in favor of limiting contaminant concentrations to the criteria contained in Tables 6(a) and 6(b). (Bak)

*Response:* IDEM believes applying a non-degradation approach to ground water used as drinking water is appropriate. Allowing degradation up to the numeric criteria shifts the burden of maintaining and protecting the ground water from those that may contaminate to those that use the water. IDEM believes such an allowance is inappropriate.

*Comment:* Guidance or other language should be added to section 5(c) to discern a relative difference between natural ground water variation and contamination. As well, the narrative criteria of section 5(c) should not be equally applied for primary and secondary maximum contaminant levels (MCLs), numeric standards of sections 6 and 7. (NiS)

*Response:* IDEM agrees and anticipates that, as an agency establishes how it will implement these standards through rules, it will take into consideration differences between natural ground water variation and contamination. IDEM believes that using EPA secondary MCLs as health protective goals is appropriate for ground water in drinking water wells. IDEM changed the rule to use the EPA secondary MCLs as indicators in drinking water class ground water that is not in a drinking water well.

*Comment:* Sections 5(d) and 7(c)(3) both refer to meeting standards in the surface water at the ground water—surface water interface, but neither includes a provision for mixing zones. Without mixing zones, some situations would require remediation where there is no significant impact to the environment. Furthermore, the wording of the sections seem to require remediation of natural concentrations of compounds if they exceed the surface water standards, but no indication is given of what surface water quality standards should be used in the comparison. (NiS)

*Response:* IDEM believes that the language neither allows nor disallows the mixing zone concept. The surface water standards must be met as determined by IDEM’s surface water program.

*Comment:* It is appropriate under many circumstances to allow for dilution of ground water into surface water prior to application of the surface water quality standards. Such dilution is consistent with long-standing precedent at hazardous waste sites as well as in wastewater permitting and is often the most appropriate approach given the technical basis of the surface water quality standard and risk assessment exposure scenarios. In addition, most federal and state risk assessment guidance provides for the use of fate and transport analyses in such situations in the more detailed tiers of site evaluation. (USS)

*Response:* IDEM believes that the language neither allows nor disallows for dilution. The surface water standards must be met as determined by IDEM’s surface water program.

*Comment:* The rule should not include any additional provisions regarding degradation/antidegradation because an antidegradation policy in the rule would be inconsistent with governing law that requires risk-based decision making. The question is not whether a contaminant plume is expanding but rather if the expanding plume presents a current or reasonably foreseeable future risk to human health or the environment. Without such risk, current Indiana law does not allow the state to require that the plume be cleaned up or its movement arrested. (B&T)

*Response:* IDEM believes applying a non-degradation approach to ground water used as drinking water is appropriate. Allowing degradation up to the numeric criteria shifts the burden of maintaining and protecting the ground water from those that may contaminate to those that use the water. IDEM believes such an allowance is inappropriate. IDEM believes that establishing risk of exposure to an expanding plume is difficult. Considering this, IDEM believes it appropriate to require the stabilization of a plume before risk is evaluated. Language was added to the rule to allow a risk-based approach when appropriate.

*Comment:* The language in the rule against degradation of ground water quality is inadequate; without PALs, the rule almost encourages contamination. Regarding the language of section 5(c), relying on a prohibition that contaminant level in a drinking water well cannot be increased above background will likely result in contamination of an entire aquifer by the time the contaminant reaches a well. The focus must be on preventing contamination long before it reaches drinking water wells. (HEC)

*Response:* The rule now says: “An agency shall use its regulatory authority, when adopting rules, to ensure the criteria established in this rule will not be exceeded in ground water. . . . When adopting rules, an agency may . . . apply preventative action levels, design standards, a monitoring framework, or other regulatory methods to ensure that facilities, practices, and activities are designed and managed to eliminate or minimize potential adverse impacts to the existing ground water quality.”. In ensuring that the criteria are met, an agency may employ preventative action levels or other tools it deems adequate to prevent contamination of ground water aquifers.

*Comment:* Section 5(e) concerning water in a karst area determined to be surface water needs to take into account that springs and wells serve household uses in karst areas, and since surface water and ground water are so intimately connected in karst regions, the water quality standard in karst areas should be whichever is more stringent between the surface or ground water standards. (HEC)

*Response:* Language was added to the rule to clarify that both ground water and surface water standards apply in such water as designated by the commissioner.

*Comment:* The use of primary maximum contaminant levels (MCLs) and selected secondary MCLs in section 6 as numeric criteria does not take into proper consideration the development of these standards nor the inherent variability in background concentrations of substances in ground water which necessitate the reasonable use of average concentrations in setting enforceable ground water standards. Risk-based analyses are appropriate to use as remediation standards for drinking water class ground water. (IEU)

*Response:* IDEM believes that the MCLs are the appropriate numeric criteria for drinking water class water. EPA maximum contaminant levels are generally accepted for use nationwide in several applications, as the levels have been set based on peer-reviewed scientific data and intensive technological evaluation. EPA, when setting the levels, considers many factors including: the chemical’s occurrence in the environment, likelihood of exposure to the chemical, risk of adverse health effects when exposed to the chemical, methods of detection for the chemical, and the impacts of regulating the chemical on water systems, the economy, and the public health. EPA takes public comment throughout the MCL establishment process. Use of the MCLs provides consistency among the regulatory programs of other states and with the existing regulation of public drinking water supplies.

*Comment:* Reliance on widely-applicable standards such as the EPA maximum contaminant levels is sensible for several reasons, including that these standards have been in wide application nationwide and have been the subject of extensive review and comment and their use provides consistency with the programs of other states and with the existing regulation of public drinking water supplies. (USS)

*Response:* IDEM agrees.

*Comment:* The numeric criteria of section 6 for drinking water class ground water should be

background levels, and the cleanup of ground water resources should be to maximum contaminant level goals (MCLG). Numeric criteria based on human health risks should not be viewed as a level of acceptable contamination. The only purpose in developing numeric criteria based on human health risk should be for use in cleanups. (HEC)

*Response:* IDEM believes that the MCLs are the appropriate numeric criteria for drinking water class water.

*Comment:* In Table 6(a)(1), the contaminant “gross alpha particle activity” should be followed by “(including radium 226 but excluding radon & uranium)” to be consistent with drinking water regulation 327 IAC 8-2-9. (IEU)

*Response:* IDEM agrees, and this change was made.

*Comment:* The note at the end of Table 6(a)(2) is not necessary since there are no contaminants in the table without a chemical abstract service number. (IEU)

*Response:* IDEM agrees, and this change was made.

*Comment:* Section 6(b) should not be worded so that secondary contaminants are given limits that cannot be exceeded because they are not of equal status with primary standards for which EPA has issued binding maximum contaminant levels (MCLs). (IMA, Beth, Eli, ISEG)

*Response:* IDEM believes that the use of EPA secondary MCLs as health protective goals is appropriate for ground water in drinking water wells. IDEM changed the rule to use EPA secondary MCLs as indicators in drinking water class ground water that is not in a drinking water well.

*Comment:* Secondary MCLs should not be used as criteria but should instead be used as indicator parameters that may require action if they are increasing or are exceeded. (III)

*Response:* IDEM believes that the use of EPA secondary MCLs as health protective goals is appropriate for ground water in a drinking water well. IDEM changed the rule to use EPA secondary MCLs as indicators in drinking water class ground water that is not in a drinking water well.

*Comment:* Criteria for lead and ammonia should be removed from section 6(a) and placed in section 6(b) as secondary contaminants. (IMA, Beth, Bak, Eli, ISEG)

*Response:* IDEM removed the ammonia criterion from the rule. Although there is no established MCL for ammonia, IDEM initially included it because of concern over its conversion to nitrate. However, since the rule includes the established MCL for nitrate, IDEM believes the rule adequately addresses this concern. IDEM retained the lead criterion.

*Comment:* The criteria for lead is too conservative and regulated entities will be required to control lead at a level lower than what is required to protect human health. The ground water criterion for lead of fifteen one-thousandths (0.015) milligrams per liter (mg/l) may be appropriate only if the criterion is applied at a well used for human consumption and only if a statistical approach is used to allow some exceedences as would be consistent with the current National Primary Drinking Water Standards. A ground water criterion for lead of five one-thousandths (0.0050) mg/l should be applied at all other points to protect the ground water as would be consistent with current waste regulations. (AEP, IEU)

*Response:* IDEM believes that lead is a serious health threat to children; therefore, IDEM retained the lead criterion of fifteen one-thousandths (0.015) mg/l.

*Comment:* It is appropriate that the rule contain an enforceable lead standard to meet the ground water protection statute requirement to establish health protection goals. (HEC)

*Response:* IDEM believes that lead is a serious health threat to children; therefore, IDEM retained the lead criterion.

*Comment:* There should be no limit in the rule for ammonia because there is no ammonia MCL established. As well, EPA has no MCL for lead, only an action level developed in guidance without due process protections. The rule must not be allowed to make this non-legal lead limit a requirement. (B&T, IEU)

*Response:* IDEM removed the ammonia criterion from the rule. IDEM believes that lead is a serious health threat to children; therefore, IDEM retained the lead criterion.

*Comment:* Secondary maximum contaminant levels (MCLs) listed in Table 6(b) are federal non-enforceable guidelines for the states for contaminants that may cause cosmetic or aesthetic effects. EPA proposed new regulations for sulfate in 1994 but has since concluded that sulfate is a relatively low risk contaminant and suspended further regulatory activity. The 1996 Amendments to the Safe Drinking Water Act require a study concerning sulfate risk to be completed by August 6, 2001. The criterion for sulfate should be deleted from the ground water rule until there is resolution of the national level activity. (IEU)

*Response:* IDEM believes that the use of EPA secondary MCLs as health protective goals is appropriate for ground water in a drinking water well. IDEM changed the rule to use EPA secondary MCLs as indicators in drinking water class ground water that is not in a drinking water well.

*Comment:* The application of secondary maximum contaminant limits (MCL's) listed in section 6(b) will impact particularly on governmental units charged with using and storing salt for the removal of ice from streets. Most of the shallow ground water along many thoroughfares may currently not meet the chloride standard. The draft rule, by making a requirement of secondary maximum contaminant limits, is transforming what now is an unenforceable federal government regulation into a fully applicable numeric standard, but before this occurs, additional data evaluation of existing chloride concentration in the vicinity of roads, streets, and highways must be undertaken to determine the impact of the rule on municipal salting operations and properties housing salt storage facilities. (INDI)

*Response:* IDEM believes that the use of EPA secondary MCLs as health protective goals is appropriate for ground water in a drinking water well. IDEM changed the rule to use EPA secondary MCLs as indicators in drinking water class ground water that is not in a drinking water well.

*Comment:* References to section 6(b) secondary contaminant criteria should be removed from section 7 concerning naturally limited class ground water. (IMA, Eli, ISEG)

*Response:* IDEM agrees, and this change was made.

*Comment:* The draft rule is too broad with respect to contaminants that are required to undergo a human health risk analysis according to 327 IAC 2-11-6(c), and regulated entities will be required to perform expensive risk analyses with little or no benefit. (AEP, IEU)

*Response:* This provision has been reworded to no longer require a risk analysis to be performed for every contaminant.

*Comment:* The intent of section 6(c) is appropriate to allow the development of ground water quality criteria for constituents not currently covered by MCLs using risk assessment. The draft rule should be modified to note that the focus of any human health risk assessment should be those risk assessment pathways included in the development of the MCLs (for example, drinking water and exposure to water through domestic use). Since sections 6(a) and 6(b) note that the criteria are based on EPA calculations, similar calculation methods should serve as the basis for developing criteria for chemicals without MCLs. The reference in section 6(c)(2) to appropriate toxicological data for ingestion and inhalation should reiterate that the focus is the drinking water pathway. (USS)

*Response:* IDEM changed the rule language to simply say "appropriate toxicological data"; however, EPA calculations of MCLs consider exposure from ingestion and inhalation.

*Comment:* The language of section 6(c)(2) concerning "inhalation" is inconsistent with the MCLs of the federal EPA Safe Drinking Water Act. (IMA, Eli, ISEG)

*Response:* IDEM changed the rule language to simply say "appropriate toxicological data"; however, EPA calculations of MCLs consider exposure from ingestion and inhalation.

*Comment:* The language of section 6(c)(2) should limit the human health risk analysis to ingestion and not inhalation. (BPA, IEU)



*Response:* IDEM changed the rule language to simply say “appropriate toxicological data”; however, EPA calculations of MCLs consider exposure from ingestion and inhalation.

*Comment:* The language of section 6(c)(2) should include toxicological data based on dermal absorption. (HEC)

*Response:* IDEM changed the rule language to simply say “appropriate toxicological data”; therefore, exposure through dermal absorption should be considered in the risk analysis.

*Comment:* The rule, as with the National Pollutant Discharge Elimination System (NPDES) rules, should allow the use of Best Professional Judgement (BPJ) in determining reasonable potential for a substance to be a health risk. As written, the ground water rule directs a state permit writer to require a human health risk analysis to determine a numeric criterion for each and every industrial waste stream and constituent for which there is no numeric criterion in section 6 of the rule. This level of investigation does not make sense as there are so many substances discharged daily from commercial and industrial sources, including janitorial supplies, that are so benign it should be intuitive that there is no risk to human health. Yet, this proposed rule would require a human risk analysis of these substances. (AEP, IEU)

*Response:* The provision concerning the establishment of criteria based on a human health risk analysis has been reworded to no longer require a risk analysis to be performed for every contaminant.

*Comment:* The requirement of section 6(d) should be based upon a site specific analysis using ingestion to determine if the naturally occurring concentration is protective of human health. (BPA)

*Response:* IDEM has changed the rule to say that the numeric criteria are health protective goals. IDEM believes these goals should be considered when ground water is used for human consumption, even when an existing concentration is naturally occurring.

*Comment:* Section 6(d), in establishing the naturally occurring concentration as the standard when a contaminant is naturally occurring at a level greater than the MCL, is inconsistent with the idea of setting the standard at the MCL when the naturally occurring concentration is lower than the standard. The background concentration should be the standard for all drinking water class ground water. (HEC)

*Response:* IDEM has changed the rule to say that the numeric criteria are health protective goals. IDEM believes these goals should be considered when ground water is used for human consumption, even when an existing concentration is naturally occurring.

*Comment:* Section 6(d) properly accounts for the real potential that naturally occurring concentrations of chemicals may exceed drinking water numeric criteria, and it is appropriate to adjust the ground water quality standards to reflect these circumstances. Inclusion of guidance on the mechanism for establishing such naturally occurring concentration would be helpful. The draft rule should also include explicit mention and consideration for the potential that ground water at properties down gradient of contaminant sources should have relief from drinking water based ground water quality standards when the contamination stems from the actions of other parties at upgradient sources. (USS)

*Response:* IDEM has changed the rule to say that the numeric criteria are health protective goals. IDEM believes these goals should be considered when ground water is used for human consumption, even when an existing concentration is naturally occurring. The regulatory program, when implementing the standards through its rules, may establish guidance for determining the naturally occurring concentration.

*Comment:* The numeric criteria of section 6 and 7 have no associated laboratory analytical methods listed in the rule. Uniform analytical laboratory methods should be stipulated so that the detection levels are the same and will provide useful data. (NiS)

*Response:* To accommodate the variable methodologies used by differing regulatory programs and agencies, the laboratory analytical methods are not specified in the rule. It will be the responsibility of the regulatory program applying the numeric criterion to specify acceptable

laboratory analytical methodologies.

*Comment:* Section 7(a) provides a standard for ground water classified as naturally limited class for reasons other than having a total dissolved solids concentration of three thousand (3,000) milligrams per liter or more, but there apparently is no standard for ground waters having a total dissolved solids greater than three thousand (3,000) milligrams per liter which is a wasteful treatment of these ground waters that are amenable to cleanup and use as drinking water with technology that is currently available as well as technology that might be available in the future. (HEC)

*Response:* IDEM changed the TDS qualification criterion for a naturally limited classification to ten thousand (10,000) milligrams per liter to recognize EPA's definition of an underground source of drinking water. Additionally, numeric criteria now apply to ground water classified as naturally limited because it has a TDS concentration above ten thousand (10,000) milligrams per liter.

*Comment:* Sections 7(a)(1) and 7(c)(1) provide situations for naturally limited class ground water in which no contaminant shall be at or above a concentration that poses a threat to human health, but naturally limited class ground water is assumed not to be used as drinking water; therefore, this requirement should be limited to exposure by inhalation or dermal contact. (BPA)

*Response:* IDEM moved and incorporated the language of 7(a)(1) into the goal of the rule, which says: "The goal of this rule is to maintain and protect the quality of Indiana's ground water to ensure that exposure to the ground water will not pose a threat to human health, any natural resource, or the environment.". IDEM changed the language of 7(c)(1) to allow a numeric criterion to be set using a risk analysis based on "appropriate toxicological data".

*Comment:* The implied human health risk assessment of section 7(a)(1) should be based on realistic risk assessment exposure pathways known, or likely, to occur at the site. (USS)

*Response:* IDEM moved and incorporated the language of 7(a)(1) into the goal of the rule which says: "The goal of this rule is to maintain and protect the quality of Indiana's ground water to ensure that exposure to the ground water will not pose a threat to human health, any natural resource, or the environment.". IDEM changed the language of 7(c)(1) to allow a numeric criterion to be set using a risk analysis based on "appropriate toxicological data".

*Comment:* Sections 7(a)(1) and 7(c)(1) should be removed entirely. (ISEG)

*Response:* IDEM moved and incorporated the language of 7(a)(1) into the goal of the rule which says: "The goal of this rule is to maintain and protect the quality of Indiana's ground water to ensure that exposure to the ground water will not pose a threat to human health, any natural resource, or the environment.". IDEM changed the language of 7(c)(1) to allow a numeric criterion to be set using a risk analysis based on "appropriate toxicological data".

*Comment:* Section 7(a)(2)(A)(ii) should be modified with the inclusion of "the nearest, reasonably expected scenario of" after "is based on appropriate toxicological data for". (NSWMA)

*Response:* The use of appropriate toxicological data takes into account the nearest, reasonably expected point of exposure.

*Comment:* The term "appropriate toxicological data" should be clearly defined. (INDI)

*Response:* IDEM believes that the meaning of the term "appropriate toxicological data" is clear to those who routinely complete and evaluate risk assessments.

*Comment:* Additional clarification is needed to define the basis for a default standard of ten (10) times the drinking water class numeric criteria, as stated in section 7(a)(2)(B), to give understanding as to whether detection at any level relative to either the MCL or a quantifiable health risk level will bring these areas under the jurisdiction of the rule. This issue is a key concern for the level of remediation that may be required during the redevelopment of existing brownfield properties, and it will impact the determination for alternative cleanup standards using risk assessment protocols, and overall, it concerns the integration of the rule with the proposed RISC program. (INDI)

*Response:* The default standard of ten (10) times the drinking water class numeric criteria is based on agency calculations showing that, generally, the acceptable risk level from dermal

exposure to a contaminant is one (1) order of magnitude higher than that from ingestion and inhalation. IDEM believes the most likely exposure to naturally limited class ground water is dermal contact. Additionally the statement: “The standards established in this rule shall allow, as appropriate, ground water remediations to be consistent with the remediation objectives set forth in IC 13-25-5-8.5.” applies to all classes of ground water. Generally, the appropriate remediation program will establish cleanup numbers. IDEM has included language in the rule to help ensure no interference or conflict with those programs’ ability to do so.

*Comment:* The default standard of ten (10) times the drinking water class numeric criteria, as stated in section 7(a)(2)(B), might be acceptable if the naturally limited class ground water were redefined. (HEC)

*Response:* IDEM redefined the qualifications and criteria for naturally limited class. The default standard of ten (10) times the drinking water class numeric criteria is based on agency calculations showing that, generally, the acceptable risk level from dermal exposure to a contaminant is one (1) order of magnitude higher than that from ingestion and inhalation. IDEM believes that the most likely exposure to naturally limited class ground water is dermal contact.

*Comment:* The intent of section 7(c) is reasonable to allow for alternative standards that are less stringent than the drinking water based standards if the site does not support drinking water wells but does have other uses. However, it is not acceptable to require that surface water quality standards must be applied at the ground water—surface water interface. (USS)

*Response:* IDEM believes that requiring the application of the surface water quality standards at the ground water-surface water interface (for waters of the state) is appropriate, as the numeric criteria established in the ground water quality standards may not be protective of nonhuman species exposed to surface water.

*Comment:* Sections 7(c)(2) should be reworded to only protect existing uses of ground water. (ISEG)

*Response:* IDEM believes that protecting both the current and future uses of ground water is appropriate.

*Comment:* The language of section 7(c)(4) should be reworded to only protect residential drinking water sources rather than all drinking water sources as the draft language states. (IMA, Eli, ISEG)

*Response:* IDEM believes that protecting all drinking water supplies (current, future, public, and private) is appropriate.

*Comment:* The rule needs to add an additional subsection to section 7 to specify that there are no numeric criteria that apply to water classified as naturally limited class due to a total dissolved solids concentration of three thousand (3,000) mg/l or more. (ISEG)

*Response:* The qualifications and criteria for naturally limited classification have been changed. The TDS qualification criterion for a naturally limited class ground water was changed to ten thousand (10,000) milligrams per liter to recognize EPA’s definition of an underground source of drinking water. Additionally, numeric criteria now apply to ground water classified as naturally limited because it has a TDS concentration above ten thousand (10,000) milligrams per liter. Also, activity based, automatic qualifications for naturally limited were added to the rule. For example, ground water is automatically classified as naturally limited if it is in the injection zone of a permitted Class I, II, or III injection well. For ground water that automatically qualifies as naturally limited, the narrative criteria in section 5 of the rule apply.

*Comment:* Ground water quality can vary significantly both horizontally and vertically across or along the location of standards application, and ground water quality can vary seasonally and over time; therefore, the rule should incorporate the principles of volume averaging (averaged in terms of location and time) to determine that an appropriate average concentration exists at the location of standards application for comparison to the numeric criteria. The evaluation methodology should be consistent across all programs. (INDI)

*Response:* IDEM agrees and anticipates that as an agency establishes how it will implement these standards through rules it will take into consideration natural ground water quality variations.

*Comment:* The language of section 8 concerning numeric criteria for impacted drinking water class ground water would allow the presence of one pollutant to permit contamination by other pollutants. The development of numeric criteria based on risk assessment should not be used to justify that it is safe to pollute ground water. The language that appears in section 7(b) indicating that the naturally occurring concentrations shall be used as the numeric criterion for a contaminant that is naturally occurring at a concentration greater than the drinking water numeric criterion should be repeated in section 8. (HEC)

*Response:* IDEM has changed the rule to make it clear that ground water classified as impaired (formerly impacted) is classified as such only for the contaminants that have concentrations above the numeric criteria. Thus, no new contaminant can be added that will increase the concentration of that contaminant above the drinking water class numeric criterion without a reevaluation of the impaired classification requirements. IDEM has designed the impaired class to recognize past contamination and facilitate remediation while still protecting ground water.

*Comment:* It is appropriate to set standards for impacted drinking water class ground water, as section 8 does, by way of human health risk assessment since criteria to protect human health and the environment is established by section 4(c) and will provide adequate safe guards for the alternative to the drinking water based ground water quality standard. (USS)

*Response:* IDEM agrees.

*Comment:* Section 9 concerning the location of standards application provides very good guidance which will be required to delineate classification areas. (BPA, III)

*Response:* IDEM has refined section 9 and the location of standards application is now captured in the concept of the ground water management zone. IDEM believes that the new language in section 9 further clarifies how, when, and where a ground water management zone is established.

*Comment:* The location of standards application should be at the boundary of the saturated zone. Using arbitrary surface boundaries as a point of standards application is a prescription for creating more contaminated sites, ruined wells, brownfields, and future ground water contamination events. The rule emphasis should be on preventing contaminants from entering ground water not waiting until contamination occurs before addressing it with a cleanup that may be costly and difficult to achieve. (HEC)

*Response:* The location of standards application was always meant to be three (3) dimensional in nature. To help clarify this, IDEM changed the rule and replaced the location of standards application with the ground water management zone. The rule defines the ground water management zone as a “three (3) dimensional region”. The preferred approach for establishing a ground water management zone is for an agency to apply pertinent factors to identify a program or site specific zone appropriate for a facility, practice, or activity.

*Comment:* Section 9 is overly broad in its scope and seems to be in conflict with section 2(a) concerning the five (5) agencies that have applicability under the rule. Section 9(b) is vague in implication and places vast discretionary powers in the hands of the commissioner. The language of section 9 needs to be more ascertainable. (INDI)

*Response:* IDEM has changed the rule and replaced the location of standards application with the ground water management zone. The establishment of the ground water management zone is made by the agency with jurisdiction over the facility, practice, or activity.

*Comment:* The flexibility of section 9 concerning the location of standards application is appropriate; however, it would be simpler and still properly protective of health when considered in the context of other safeguards for human health contained in the draft rule if section 9(b)(2) were modified so that the default location of standard application is the property boundary and not three hundred (300) feet from the contaminant source when the contaminant source is more than three

hundred (300) feet from the property boundary. (USS, INDI)

*Response:* IDEM changed the rule and replaced the location of standards application with the ground water management zone. The preferred approach for establishing a ground water management zone is for an agency to apply pertinent factors to identify a program or site specific zone appropriate for a facility, practice, activity, or ground water contamination assessment or remediation. In the absence of an agency established ground water management zone, the default approach may be used. In the default approach, IDEM believes it is appropriate to try and limit ground water contamination within property lines since ground water migrates and property lines and ownerships change. If an agency does not think the three hundred (300) foot limitation is appropriate for a facility, practice, or activity it regulates, then the rule allows for the establishment of a site specific ground water management zone.

*Comment:* Section 9(a) concerning the location of standards application should be modified, to be consistent with the amendment proposed to the ground water statute in SEA 83, by rewording “An agency may use . . .” to “An agency shall use . . .” so that the requirements of subsection (b) are mandatory. (IMA, Eli, ICC, ISEG)

*Response:* With the inclusion of a default approach for establishing a ground water management zone, IDEM believes the development of program or site specific ground water management zones should be left to the discretion of the agency with jurisdiction.

*Comment:* The site specific factors of section 9(b)(1) should be limited by deleting clauses (A) and (F). (ISEG)

*Response:* IDEM believes it is appropriate for an agency to consider regulatory program requirements and impacts to any natural resource and the environment when establishing a ground water management zone.

*Comment:* Section 9(b)(2)(B) should be modified by the placement of “permanent” before “property boundary.” (IMA, Eli, ISEG)

*Response:* IDEM believes this change would be inappropriate as property boundaries are not always permanent.

*Comment:* Section 9(b)(2)(B) should be deleted from the rule so as to not create ambiguity in the default approach to determining the location of standards application. If an agency is concerned with the distance between the contaminant source and the property boundary, it can implement site specific evaluations under section 9(b)(1). (ICC)

*Response:* IDEM changed the rule and replaced the location of standards application with the ground water management zone. The preferred approach for establishing a ground water management zone is for an agency to apply pertinent factors to identify a program or site specific zone appropriate for a facility, practice, activity, or ground water contamination assessment or remediation. In the absence of an agency established ground water management zone, the default approach may be used. In the default approach, IDEM believes it is appropriate to try and limit ground water contamination within property lines since ground water migrates and property lines and ownerships change. If an agency does not think the three hundred (300) foot limitation is appropriate for a facility, practice, or activity it regulates, then the rule allows for the establishment of a site specific ground water management zone.

*Comment:* The default approach for location of standards application should not be applied if a site specific showing is made to the agency with responsibility for the site that a different location is more appropriate. (IMA, Beth, Eli)

*Response:* IDEM changed the rule and replaced the location of standards application with the ground water management zone. The preferred approach for establishing a ground water management zone is for an agency to apply pertinent factors to identify a program or site specific zone appropriate for a facility, practice, activity, or ground water contamination assessment or remediation. The default approach may be used only if an agency decides to use it or in the absence of an agency established ground water management zone.

*Comment:* The rule should not try to establish implementation strategies that apply to specific activities but should allow the various agencies named in the statute to develop rules in response to the ground water quality standards rule to regulate activities under their authority. (BPA, B&T, USS)

*Response:* IDEM agrees.

*Comment:* The rule needs to specify implementation strategies that focus on prevention of contamination to ground water from the following types of activities: (1) Activities that discharge to the subsurface and cause contaminants to enter the aquifer are indicating that “treatment” and attenuation by the subsurface have been inadequate; therefore, ground water standards should apply at the zone of saturation and contain a requirement for cleanup to background levels as an incentive to prevent ground water contamination. (2) Activities that are designed not to discharge do have occasional, unintentional discharges and should, therefore, be treated the same as activities that discharge to the subsurface. (3) Activities addressing historical contamination that occurred as a result of practices that were once considered acceptable should be cleaned up to the maximum contaminant level goal (MCLG) which would be consistent with the ground water protection statute requirement to establish health protection goals. If it is not technically feasible to achieve the MCLG, cleanup to the MCL may be acceptable though the MCLs established by the Safe Drinking Water Act are not sufficiently protective of human health since they were designed to take cost considerations into account. (4) Activities addressing ground water contamination that has occurred under modern regulatory programs must be held to a higher standard and required to clean up to background levels so that the emphasis of the rule is on prevention of ground water contamination.(HEC)

*Response:* IDEM agrees it is important for a regulatory program to employ implementation strategies that focus on prevention of contamination to ground water. However, IDEM believes it is appropriate for an individual agency to specify those strategies for the activities it regulates. The rule now says: “An agency shall use its regulatory authority, when adopting rules, to ensure the criteria established in this rule will not be exceeded in ground water. . . . When adopting rules, an agency may . . . apply preventative action levels, design standards, a monitoring framework, or other regulatory methods to ensure that facilities, practices, and activities are designed and managed to eliminate or minimize potential adverse impacts to the existing ground water quality.”. In ensuring that the criteria are met, an agency may employ preventative action levels or other tools it deems adequate to prevent contamination of ground water.

*Comment:* Preventative action levels (PALs) should not be included in the rule as they are inconsistent with risk and governing law and would create a bureaucratic regulatory scheme in which the costs of dealing with this level of effort would outweigh any conceivable benefits. (B&T, USS)

*Response:* IDEM agrees that including preventative action limits in this rule is not appropriate. However, the rule now says: “An agency shall use its regulatory authority, when adopting rules, to ensure the criteria established in this rule will not be exceeded in ground water. . . . When adopting rules, an agency may . . . apply preventative action levels, design standards, a monitoring framework, or other regulatory methods to ensure that facilities, practices, and activities are designed and managed to eliminate or minimize potential adverse impacts to the existing ground water quality.”. In ensuring that the criteria are met, an agency may employ preventative action levels or other tools it deems adequate to prevent contamination of ground water.

*Comment:* Development of preventative action standards would likely duplicate existing regulatory authority and very likely exceed the water pollution control board's authority. (USS)

*Response:* IDEM agrees that including preventative action limits in this rule is not appropriate. However, the rule now says: “An agency shall use its regulatory authority, when adopting rules, to ensure the criteria established in this rule will not be exceeded in ground water. . . . When adopting rules, an agency may . . . apply preventative action levels, design standards, a monitoring framework, or other regulatory methods to ensure that facilities, practices, and activities are designed and managed to eliminate or minimize potential adverse impacts to the existing ground

water quality.”. In ensuring that the criteria are met, an agency may employ preventative action levels or other tools it deems adequate to prevent contamination of ground water.

*Comment:* PALs, which most likely will be very activity specific and potentially can change over time, would be most effectively established and used by the appropriate regulatory authority concerned with the specific activity. (BPA, USS)

*Response:* IDEM agrees.

*Comment:* PALs are an absolutely essential part of ground water protection and should be invoked when monitoring indicates an increasing trend in concentration data or when the concentration reaches twenty percent (20%) of the enforceable standard. Indiana has contaminated ground water sites all over the state; a rule without a focus on prevention just allows for the creation of more contaminated ground water sites in the future. A ground water standard rule including PALs would be consistent with the ground water protection statute requirement to establish minimum compliance levels for ground water monitoring at regulated facilities. Furthermore, early detection of ground water contamination through the enforcement of PALs would assist in achieving the statutory requirement to ban the discharge of effluents into potable ground water and to establish concentration limits for contaminants in ambient ground water. (HEC)

*Response:* IDEM agrees that preventative action levels may be a useful tool; however, IDEM believes that requiring preventative action limits in this rule is not appropriate. The rule now says: “An agency shall use its regulatory authority, when adopting rules, to ensure the criteria established in this rule will not be exceeded in ground water. . . . When adopting rules, an agency may . . . apply preventative action levels, design standards, a monitoring framework, or other regulatory methods to ensure that facilities, practices, and activities are designed and managed to eliminate or minimize potential adverse impacts to the existing ground water quality.”. In ensuring that the criteria are met, an agency may employ preventative action levels or other tools it deems adequate to prevent contamination of ground water.

*Comment:* The draft rule does not address the issue of background ground water quality from non-naturally occurring sources. There have been instances of upgradient sources of contamination resulting in IDEM requesting investigation and remediation efforts; the rule should specify how future instances such as this will be addressed. (INDI)

*Response:* Language was added in subsections 6(f) and 7(c) to address the issue of background water quality from non-naturally occurring sources when identifying numeric criteria for a facility, practice, or activity.

## **SUMMARY/RESPONSE TO COMMENTS RECEIVED AT THE FIRST PUBLIC HEARING**

On October 13, 1999, the water pollution control board (board) conducted the first public hearing/board meeting concerning the development of new rule 327 IAC 2-11 establishing ground water quality standards. Comments were made by the following parties:

John Kyle for Barnes & Thornburg (B&T)  
Mark E. Shere for Bethlehem Steel Corp. (Beth)  
Vince Griffin for the Indiana Chamber of Commerce (CC)  
Betsy DuSold for Eli Lilly and Company (Eli)  
Rae Schnapp for Hoosier Environmental Council (HEC)  
Jeff Stant for Hoosier Environmental Council (HEC)  
Dana Meier for the Indiana Coal Council (ICC)  
Bob Johnston for Ispat Inland Inc. (III)  
Tom Berquist for Ortman Drilling Company (Ort)  
Greg Buck and Richard Hill (comments delivered by Jeff Stant) for Save the Valley (SV)

Tom Anderson for Save the Dunes Council (Dunes)  
Bill Hayden for the Hoosier Chapter of the Sierra Club (SC)  
Jane Dustin (comments delivered by Bill Hayden) for the Izaak Walton League (IWL)  
Charles H. Norris (comments delivered by Bill Hayden) for Geo-Hydro, Inc. (GH)

Following is a summary of the comments received and IDEM's responses thereto:

*Comment:* A rule concerning ground water standards is long over due and this long delay since the original statute charged the water pollution control board to adopt standards causes questions as to the earnestness of Indiana's commitment to attain any kind of reasonable ground water standards. (SV)

*Response:* IDEM agrees that a rule concerning ground water standards is necessary and, with this preliminarily adopted draft, has attempted to overcome some of the barriers that have prevented the accomplishment of ground water quality standards in the past.

*Comment:* The board needs to adopt ground water standards that are more stringent than the ones that are in the draft rule for preliminary adoption because ground water can be contaminated easily from many sources and the cost of clean up of contaminated ground water or providing alternative water supply should outweigh consideration of the cost to comply with a rule containing adequately stringent standards. (SV)

*Response:* The establishment of ground water quality standards does not lessen the obligation of facilities, practices, or activities to comply with other established rules, regulations, and policies designed to prevent and otherwise minimize ground water contamination, such as secondary containment, spill reporting, wellhead protection, and the risk integrated system of closures. IDEM believes the ground water quality standards established in this preliminarily adopted draft are sufficiently stringent to protect the beneficial uses of ground water, particularly its use as a drinking water source.

*Comment:* The draft rule requires no action until ground water becomes unfit to drink. The rule should require that contamination be prevented before it approaches unsafe levels and not allow such prevention to be exercised as discretionary authority by various state agencies. (SV, HEC)

*Response:* Section 2(c) of this preliminarily adopted rule requires action by the department of environmental management, the department of natural resources, the state department of health, the office of the state chemist, and the office of the state fire marshal to "ensure the criteria established in this rule will not be exceeded" and "eliminate or minimize potential adverse impacts". IDEM believes that agencies should act proactively in accordance with this section of the rule. The rule is designed to protect the beneficial uses of ground water, particularly its use as a drinking water source. Additionally, the establishment of ground water quality standards does not lessen the obligation of facilities, practices, or activities to comply with other established rules, regulations, and policies designed to prevent and otherwise minimize ground water contamination, such as secondary containment, spill reporting, wellhead protection, and the risk integrated system of closures.

*Comment:* There are many substances for which toxicological data are not presently available primarily due to the vastness of these substances and that environmental agencies have not had the time to develop toxicological data for them; however, there is scientific community agreement that many of these substances are dangerous to human health and the environment. Under the draft rule, these unclassified substances are exempt from any regulation. To err on the side of safety and to be in keeping with state law, there should be no discharges to potable water allowed by the ground water standards rule. (SV)

*Response:* IDEM believes the language of section 6(d) of the preliminarily adopted rule, "If the commissioner determines that a numeric criterion for a contaminant without a drinking water class numeric criterion established in subsection(a) is necessary, a risk analysis shall be used to establish a numeric criterion for that contaminant ...", enables an agency to use the ground water



quality standards to regulate any contaminant of concern.

*Comment:* Risk assessment analysis is appropriate for establishing levels of clean up at a contaminated site; however, the draft rule allows risk assessment formulae to be used to calculate allowable concentration limits. Ground water should not be allowed to be polluted above existing background levels. To do otherwise is merely a license to pollute. (SV)

*Response:* IDEM believes that, in the absence of a United States Environmental Protection Agency (EPA) established maximum contaminant level, risk assessment analysis is appropriate to establish numeric criteria for ground water quality. Additionally, the establishment of ground water quality standards does not lessen the obligation of facilities, practices, or activities to comply with other established rules, regulations, and policies designed to prevent and otherwise minimize ground water contamination, such as secondary containment, spill reporting, wellhead protection, and the risk integrated system of closures.

*Comment:* The draft rule allows the contamination of small water supplies up to ten (10) times safe drinking water standards which seems to be an example of environmental injustice against relatively powerless individuals. (SV)

*Response:* Section 5(2) of the preliminarily adopted rule says, “Ground water shall be maintained and protected to ensure that a contaminant concentration attributable to human activity does not increase in a drinking water well.” This narrative criterion applies to any drinking water well whether it is public or private, rural or urban, or small or large. Therefore, IDEM does not believe that the rule allows the contamination of small water supplies.

*Comment:* The draft rule provision for a ground water management zone needs to be removed because these zones are imaginary constructs designed for the convenience of the polluters. A ground water management zone bears no true relationship to the reality that, within a given aquifer, there is no distinct barrier that would prevent ultimate conveyance of the pollutants beyond the boundaries of such zones. (SV)

*Response:* Section 5(1) of the preliminarily adopted rule says, “Ground water quality shall be maintained, at a minimum, to protect the existing and reasonably expected future use of the ground water.” This narrative criterion applies to any class of ground water. Additionally, according to section 9 of this rule, an agency should consider, among other factors, the risks of human exposure and the impacts to any natural resource and the environment when establishing a ground water management zone which is defined in the rule as “a three (3) dimensional region of ground water around a potential or existing contaminant source where a contaminant is or was managed to prevent or mitigate deterioration of ground water quality such that the criteria established in this rule are met”.

*Comment:* The application of a ground water management zone to the corrective action standards under the landfill rules is of concern. (HEC)

*Response:* Section 9(b) of this rule says, “The agency with jurisdiction over a facility, practice, or activity shall determine the location of the boundary and the duration of the ground water management zone.” This allows a regulatory program, including one (1) with oversight of the corrective action standards under the landfill rules, to establish an appropriate zone within the requirements of the rules and regulations it oversees.

*Comment:* The concept that future contamination is okay if it existed historically from an activity that was considered legal under another law is a problem. A rule should not be adopted that allows the continuation of ground water contamination because it resulted from an activity that formerly was allowed; ground water contamination should simply be banned. (HEC)

*Response:* IDEM does not believe that future contamination is okay. Section 5(1) of the preliminarily adopted rule says, “Ground water quality shall be maintained, at a minimum, to protect the existing and reasonably expected future use of the ground water.” This narrative criterion applies to any class of ground water. Additionally, the establishment of ground water quality standards does not lessen the obligation of facilities, practices, or activities to comply with other

established rules, regulations, and policies designed to prevent and otherwise minimize ground water contamination, such as secondary containment, spill reporting, wellhead protection, and the risk integrated system of closures. Distinguishing between a regulated and an unregulated source is one (1) consideration in the prioritization of ground water management efforts. If a facility, practice, or activity is determined to be a ground water contamination concern, then regulations can be developed to manage it to protect ground water quality.

*Comment:* The draft rule contains provisions that are unenforceable. Two (2) examples are the definition of ground water as water in the zone of saturation and the application of the ground water standards only to facilities that are already regulated. One hundred percent (100%) saturation rarely exists in the real world which could render nothing being called ground water and ground water standards should apply to the protection of ground water no matter what is the source of contamination. (SV)

*Response:* IDEM will consider changing the definition of ground water. Distinguishing between a regulated and an unregulated source is one (1) consideration in the prioritization of ground water management efforts. Section 2(c) of the rule directs agencies to adopt rules to implement the ground water quality standards. If a facility, practice, or activity is determined to be a ground water contamination concern, then regulations can be developed to manage it to protect ground water quality.

*Comment:* Workgroup members and IDEM staff have worked through many contentious issues to produce the current draft rule, and though it is not a perfect rule containing answers to all the continuing questions, the draft rule is acceptable and can go forward from this point and be supported for preliminary adoption. (Eli, Beth, CC, B&T, III, Ort, ICC)

*Response:* IDEM thanks the commenting parties for their support.

*Comment:* IDEM's comment, that it believes enforcement authority, to enforce these ground water standards, exists through the state's enforcement authority under IC 13-30, contradicts IDEM's other statement that there isn't an impact on facilities directly through these rules and there is no economic impact on those facilities from this rule. (Eli, Beth, CC, B&T, III)

*Response:* The fiscal impact analysis required by IC 4-22-2-28 is required only if compliance with the proposed rule will effect the state and entities regulated by the proposed rule. Any costs associated with an enforcement action taken by IDEM in regard to the ground water quality standards would be a result of noncompliance with the rule and are not part of the fiscal impact of the rule for purposes of IC 4-22-2-28.

*Comment:* A specific solution to the inconsistency of whether there is an economic impact on facilities from this rule is to include a statement that says these are not standards for the purposes of IC 13-30. (B&T)

*Response:* IDEM believes that to exempt these standards from the enforcement authority granted in IC 13-30 would be contrary to the statutory purpose of the agency to preserve, protect, and enhance the quality of the environment. The standards established in the rule clearly are standards subject to enforcement under 13-30.

*Comment:* The language of the draft rule is unclear regarding the relationship between the default management zone and a site-specific management zone. In a situation where a facility is large and complex, it is likely that a default management zone would be too restrictive. (Beth)

*Response:* Section 9(b) of the rule says, "The agency with jurisdiction over a facility, practice, or activity shall determine the location of the boundary and the duration of the ground water management zone." Thus, it is up to the regulatory program implementing the ground water quality standards to establish an appropriate ground water management zone, and it is the regulatory program's decision which type of zone, whether default, program specific, or site specific, is most appropriate.

*Comment:* A weakness in the draft rule is that it does not accurately reflect the basis of EPA's reason for setting the lead action level at fifteen (15) parts per billion. (Beth)

*Response:* The lead criterion of fifteen one-thousandths (0.015) mg/l was based not only on EPA's action level, but also on risk calculations by IDEM. IDEM understands that some people believe this is a conservative criterion, but IDEM believes, that since lead is a serious health threat to children, it is an appropriate criterion.

*Comment:* The draft rule contains two (2) critical elements without which the ground water standards rule will not work. These elements are the ground water management zone and the classification scheme. A rule that applies a drinking water standard at all times and in all places will not be practicably implementable. However, as the draft rule is written, it would be possible that, aside from a default or a site specific ground water management zone, the regulatory agency could simply declare the existence of a ground water management zone without any rigorous analysis of what the appropriate zone should be. (III)

*Response:* IDEM included the concepts of the ground water management zone and the classification scheme to assist in the practical application of the ground water quality standards. The language in the preliminarily adopted rule regarding this concept was developed with much discussion and input from the ground water quality standards workgroup. According to section 9 of the rule, an agency should consider, among other factors, the risks of human exposure and the impacts to any natural resource and the environment when establishing a ground water management zone. IDEM believes this language promotes an analysis of what the appropriate zone should be.

*Comment:* There is a broad use of water in Indiana and it needs to be protected. Ground water needs to have the same protection that has been afforded to public water supplies. Water supplies for private use as well as for public water supplies should have corresponding standards so as to be in keeping with the wellhead protection rule. (Ort)

*Response:* IDEM agrees and believes that the establishment of the drinking water class provides equivalent protection for both private and public drinking water supplies.

*Comment:* The rulemaking process, while requiring an investment of considerable time on the parts of many, has been frustrating in that the rule before the water pollution control board for preliminary adoption has not been seen or approved by the Ground Water Task Force. (HEC)

*Response:* The Ground Water Task Force was periodically updated on the rulemaking process and was informed of the workgroup meetings. The Ground Water Task Force routinely provided input on the rule development. On September 28, 1999, the individual members of the task force and the workgroup were sent, through electronic mail, the draft of the rule language that was preliminarily adopted on October 13, 1999. According to IC 13-18-17-1, the Ground Water Task Force was established to study ground water contamination, coordinate efforts to address ground water pollution and implementation of the Indiana ground water quality protection and management strategy, and to develop policies to prevent ground water contamination. The Ground Water Task Force is not required to approve of any rules relating to ground water.

*Comment:* The draft rule has laudable goals, but the language of the rule does not ensure that these goals will be met. The rule may actually violate statutory obligations of the Ground Water Protection Act which states that one of the purposes of the ground water standards rule is to ban discharges to potable water supplies. It appears, instead, that the draft rule actually legalizes contamination that is occurring today and in the future. (HEC)

*Response:* IDEM believes that the goal of this rule, stated on section 1, supports the obligations of the Ground Water Protection Act "to maintain and protect the quality of Indiana's ground water and ensure that exposure to the ground water will not pose a threat to human health, any natural resource, or the environment". Section 5(1) of the preliminarily adopted rule says, "Ground water quality shall be maintained, at a minimum, to protect the existing and reasonably expected future use of the ground water.". This narrative criterion applies to any class of ground water. Additionally, the establishment of ground water quality standards does not lessen the obligation of facilities, practices, or activities to comply with other established rules, regulations, and policies designed to prevent and otherwise minimize ground water contamination, such as secondary

containment, spill reporting, wellhead protection, and the risk integrated system of closures.

*Comment:* The rule will be used as a license to pollute up to the maximum contaminant level at some distance from the source, as far from the pollution source as the boundary of the ground water management zone. A loophole of the rule may allow the ground water management zone to be viewed as a mixing zone for diluting pollutants in the ground water. (HEC)

*Response:* IDEM does not believe that this rule will be used as a license to pollute. Section 5(1) of the preliminarily adopted rule says, “Ground water quality shall be maintained, at a minimum, to protect the existing and reasonably expected future use of the ground water.”. This narrative criterion applies to any class of ground water. According to section 9 of the rule, an agency should consider, among other factors, the risks of human exposure and the impacts to any natural resource and the environment when establishing a ground water management zone. Additionally, the establishment of ground water quality standards does not lessen the obligation of facilities, practices, or activities to comply with other established rules, regulations, and policies designed to prevent and otherwise minimize ground water contamination, such as secondary containment, spill reporting, wellhead protection, and the risk integrated system of closures.

*Comment:* As the rule is worded, a polluter may not even have to meet the maximum contaminant level at the edge of its ground water management zone. The polluter may, instead, be able to use some other number that is calculated based on a risk assessment formula. This is an inappropriate use of risk assessment which should be used as a tool for establishing how much contamination is acceptable to leave in place on a site that is already contaminated but not to allow pollution up to a level that is calculated to be safe based on a series of tenuous assumptions. (HEC, IWL)

*Response:* For drinking water class ground water, if there is an EPA established maximum contaminant level (MCL) for a constituent, then that MCL is the numeric criterion that must be met at and beyond the boundary of the ground water management zone. Section 6(g) does allow for a risk established criterion to be used within the boundary of the ground water management zone.

*Comment:* The last minute addition of language concerning coal mines into the rule provides an exemption for huge tracts of land in mining areas that are not subject to any standard. These areas should be designated as impaired drinking water class ground water but not as naturally limited ground water; however, section 4(c) of the draft rule allows pollution from mining impacts to become the standard in areas adjacent to the mining where people are using the ground water for drinking and irrigation. (HEC, Dunes)

*Response:* The approach of classifying the ground water in coal mined areas as naturally limited class is new to this draft of the rule. However, the concept is similar to the approach of considering the concentration of constituents in the ground water in coal mined areas as naturally occurring. This “naturally occurring constituent” approach was used in many of the prior drafts of the rule and is, therefore, familiar to the workgroup members. The classification of the ground water in coal mined areas as naturally limited does not provide an exemption for huge tracts of land in mining areas that are not subject to any standard. The narrative criteria of the rule apply as well as numeric criteria. For those contaminants attributable to coal mining activities, the existing concentration is the numeric criterion only when it is above the drinking water standard.

*Comment:* The federal Surface Mining Control and Reclamation Act requires prevention of material damage to the hydrologic balance outside of the permitted mining area, but this draft rule is stating that all of the waters inside a permitted area in the future, as well as the waters that could be influenced by the mining activity, many of which have pumping rates greater than those for public drinking water suppliers, now have the pollution level caused by the mining as the standard for those waters. This is a taking against the people who use those waters. This language should be removed from the rule or limited only to the area inside the mine permit area as in the ground water rule in Illinois that uses an impaired use standard for the degradation caused by mining up to the edge of the mining boundary and applies drinking water class standards beyond the mining boundary. (HEC,

Dunes)

*Response:* IDEM developed the rule language pertaining to coal mining with the Indiana department of natural resources (IDNR), the agency that implements the Surface Mining Control and Reclamation Act of 1977 (SMCRA). SMCRA recognizes that mining activities affect ground water quality and quantity. SMCRA requires that mining activities be planned and conducted to minimize changes to the prevailing hydrologic balance in both the permit area and adjacent areas to prevent material damage to the hydrologic balance outside the permit area. SMCRA also requires that mining operations be conducted to minimize water pollution and that in no case can federal or Indiana water quality rules or standards be violated. Therefore, based on IDNR's determination of the area of probable cumulative impact on the hydrologic balance, IDEM believes the rule adequately protects ground water resources.

*Comment:* The draft rule maintains a realistic view of the impact of coal mining on ground water, and in combination with other coal mining regulations, it will adequately maintain and protect ground water resources. (ICC)

*Response:* IDEM agrees. IDEM worked directly with IDNR to come to an understanding of coal mining issues in regard to ground water quality and to develop language that reflects that understanding.

*Comment:* At a previous meeting, the board asked how extensive is ground water contamination and is it a worsening problem. There is not a good answer available to those questions because it has not been researched, but evidence suggests that when Indiana begins to look in earnest it will be found to be widespread contamination. A ground water quality standards rule should incorporate the use of a preventative action level so that some action would be required to stop contamination before it reaches levels that are unsafe to drink. (HEC, IWL)

*Response:* The ground water quality standards establish contaminant levels for different classes of ground water. The standards are to be implemented by five agencies that have oversight of many programs that deal with ground water quality. It is up to these agency programs to determine implementation tools that will ensure the ground water quality standards are met. Preventative action limits are a tool that each agency program may use when implementing standards.

*Comment:* There is presently in place an interim ground water standards rule that has existed for about ten (10) years and offers much greater protection and more clear language than the current version of the draft rule. The interim rule should remain in effect and preliminary adoption of the draft rule delayed until the board provides IDEM and the Ground Water Task Force with a directive to include in the rule a set of preventative action levels that are fractions of the maximum contaminant level to prevent contamination before the ground water becomes unfit to drink. (HEC, Dunes, SC, IWL, GH)

*Response:* The interim ground water quality standards rule, 327 IAC 2-1-7 contains general language for minimum ground water quality conditions that is difficult to apply in specific situations. Where more specific language is provided, it is limited in scope and application; for example, there are only four (4) specific contaminant concentration limits for public ground water supplies and only one (1) for industrial supplies. The interim standards do not specifically speak about private ground water supplies at all. The preliminarily adopted ground water quality standards have broader scope than the interim ground water quality standards and do address the protection of private drinking water supplies.

*Comment:* The Clean Water Act has a provision not only to protect and maintain but also restore ground water quality. It would be insufficient to protect and maintain contaminated ground water without trying to restore it to good quality. Restoration is key to the Clean Water Act as it also should be to the state's treatment of ground water. (Dunes, IWL)

*Response:* The ground water quality standards establish contaminant levels for different classes of ground water. The standards are to be implemented by five (5) agencies that have

oversight of many programs that deal with ground water quality, including ground water remediation programs. It is up to these agency programs to determine the appropriate level of ground water remediation.

*Comment:* The draft rule contains no consideration of components of the ecosystem other than human life. The biotic communities in ground water also deserve protection. (Dunes, IWL)

*Response:* Section 1 of the rule says, “The goal of this rule is to maintain and protect the quality of Indiana’s ground water and ensure that exposure to the ground water will not pose a threat to human health, any natural resource, or the environment.”. Additionally, Section 5(1) of the rule says, “Ground water quality shall be maintained, at a minimum, to protect the existing and reasonably expected future use of the ground water.”. Support of a biotic community is a use of the ground water that should be protected. IDEM believes this language is adequate to protect biotic communities.

*Comment:* There seems to be a conflict in the rule regarding the language of section 5(3) concerning criteria for all ground water. A stream having a significant or its total amount of stream flow provided by ground water recharge is required by this rule to meet surface water maximum contaminant levels at the interface of the ground water and the surface water. The surface water standard is more strict than the standard this rule requires for ground water. The rule should be improved to eliminate this conflict by requiring more strict standards in the ground water. (Dunes, SC)

*Response:* The requirement to meet surface water quality standards at the ground water—surface water interface was included to provide consistency with the Clean Water Act and to protect surface water species in cases where the surface water is recharged by ground water.

*Comment:* Ground water is water of the United States, and it should be given at least the same protection as surface water. The rule needs an antidegradation policy that says no ground water should be degraded more than it already is. (SC)

*Response:* Section 5(1) of this preliminarily adopted rule says, “Ground water quality shall be maintained, at a minimum, to protect the existing and reasonably expected future use of the ground water.”. This narrative criterion applies to any class of ground water. Additionally, the establishment of ground water quality standards does not lessen the obligation of facilities, practices, or activities to comply with other established rules, regulations, and policies designed to prevent and otherwise minimize ground water contamination, such as secondary containment, spill reporting, wellhead protection, and the risk integrated system of closures.

*Comment:* The rule is lacking various definitions that are needed, such as for the terms “existing use,” “regulated facility,” and “zone of influence.” (SC)

*Response:* IDEM will review the need for additional definitions and include those determined as necessary for clarification of the rule.

*Comment:* Both existing uses and designated uses are mentioned in the federal Clean Water Act. Existing uses are mostly ignored in the draft rule, and the only designated use is drinking water. Ground water recharges into streams seem to be an obvious use that is ignored by the rule. (SC)

*Response:* Section 5(1) of this preliminarily adopted rule says, “Ground water quality shall be maintained, at a minimum, to protect the existing and reasonably expected future use of the ground water.”. This narrative criterion applies to any class of ground water. The requirement of Section 5(3) to meet surface water quality standards at the ground water—surface water interface was included to protect surface water species in cases where the surface water is recharged by ground water.

*Comment:* The rule as written could allow a polluter to never address the contamination caused if land adjacent to the boundary of the ground water management zone could continually be bought. (SC)

*Response:* The ground water quality standards establish contaminant levels for different classes of ground water. The standards are to be implemented by five (5) agencies that have

oversight of many programs that deal with ground water quality, including ground water remediation programs. It is up to these agency programs to determine the appropriate ground water management zone and the appropriate level of ground water remediation. Property ownership is one (1) consideration of many when establishing a ground water management zone.

*Comment:* Section 2(a) of the draft rule is confusing as to who has authority and what activities are regulated. (IWL)

*Response:* The language of section 2(a) was taken directly from IC 13-18-17-5, the statute that authorizes ground water quality standards.

*Comment:* If section 2(b) of the draft rule was taken from IC 13-18-17-5, then it was done incompletely without providing water quality compliance levels for all waters rather than just monitoring at regulated facilities. (IWL)

*Response:* Section 2(b) of the draft rule was taken from IC 13-18-17-5 (a) as it was revised with the adoption of Senate Engrossed Act 83. IC 13-18-17-5 says, “The water pollution control board shall adopt rules under IC 4-22-2 establishing groundwater quality standards that include numeric and narrative criteria, a groundwater classification plan, and a method of determining where the ground water quality standards must apply. The standards established under this subsection shall be used for the following purposes:

(1) To establish minimum compliance levels for groundwater quality monitoring at regulated facilities.

(2) To ban the discharge of effluents into potable groundwater.

(3) To establish health protection goals for untreated water in water supply wells.

(4) To establish concentration limits for contaminants in ambient groundwater.

*Comment:* The rule should reference the federal Safe Drinking Water Act for treatment requirements for ground water and should define concentration limits and include restoration and clean up targets. (IWL)

*Response:* The ground water quality standards establish contaminant levels for different classes of ground water. The standards are to be implemented by five (5) agencies that have oversight of many programs that deal with ground water quality. It is up to these agency programs to determine implementation tools that will ensure the ground water quality standards are met. Preventative action limits and treatment requirements are tools that each agency program may use when implementing standards.

*Comment:* The message from a ground water quality standards rule should simply state that Indiana will no longer tolerate the squandering of its ground water resources. Prevention of contamination is the foremost concept with clean up required of those who cause contamination and penalties paid if clean up is not accomplished. (GH)

*Response:* IDEM believes the ground water quality standards do send the message that ground water is a vital resource that must be protected though that exact wording is not contained in the preliminarily adopted rule. The ground water quality standards establish contaminant levels for different classes of ground water. The standards are to be implemented by five (5) agencies that have oversight of many programs that deal with ground water quality. It is up to these agency programs to determine implementation tools that will ensure the ground water quality standards are met. Preventative action limits and treatment requirements are tools that each agency program may use when implementing standards.

*Comment:* The best ground water should be protected by a standard of nondegradation whether or not it is currently being used. A ground water of lesser quality or quantity may warrant a lesser standard of protection, provided it is not upgradient of a higher class or does not support a unique environment or ecology. Ground water that has been depleted or degraded by human activity should be actively remediated or managed to remediate naturally without further increases of contamination. (GH)

*Response:* Section 5(1) of this preliminarily adopted rule says, “Ground water quality shall

be maintained, at a minimum, to protect the existing and reasonably expected future use of the ground water.”. This narrative criterion applies to any class of ground water. The classification plan established in section 4 of the rule recognizes that ground water may be afforded varying levels of protection, depending on specific circumstances.

*Comment:* The draft ground water quality standards rule is not a compromise achieved through equal representation by all concerned parties. It is, instead, the result of committees comprising one (1) environmental opinion opposed by numerous individuals representing a very profound economic interest in not protecting the ground water. (SC)

*Response:* IDEM welcomed all interested parties to participate in the ground water quality standards workgroup. Ultimately, it is the responsibility of IDEM to weigh appropriate factors, such as risk to human health and the environment, natural conditions, and site specific circumstances, and develop rule language that strikes a proper balance considering these factors. IDEM believes the language of the rule strikes a proper balance. IDEM did regard input from the workgroup when developing the rule language with the understanding that some opinions were under represented at the meetings. IDEM did not include any rule language as a result of a majority polling of the workgroup participants.

**327 IAC 2-1-7**  
**327 IAC 2-1.5-9**

**327 IAC 2-11**

SECTION 1. 327 IAC 2-11 IS ADDED TO READ AS FOLLOWS:

**Rule 11. Ground Water Quality Standards**

**327 IAC 2-11-1 Goal**

**Authority:** IC 13-18-3-1; IC 13-18-4-1; IC 13-18-4-3; IC 13-18-4-4; IC 13-18-4-5;  
IC 13-18-17-5

**Affected:** IC 13-18-4; IC 13-18-17

**Sec. 1. The goal of this rule is to maintain and protect the quality of Indiana’s ground water and ensure that exposure to the ground water will not pose a threat to human health, any natural resource, or the environment. (*Water Pollution Control Board; 327 IAC 2-11-1*)**

**327 IAC 2-11-2 Applicability**

**Authority:** IC 13-18-3-1; IC 13-18-4-1; IC 13-18-4-3; IC 13-18-4-4; IC 13-18-4-5;  
IC 13-18-17-5

**Affected:** IC 4-22-2; IC 13-18-4; IC 13-18-17; IC 13-25-5-8.5

**Sec. 2. (a) The following agencies shall adopt rules under IC 4-22-2 to apply the standards established in this rule to the activities they regulate:**

- (1) The department of environmental management.**
- (2) The department of natural resources.**
- (3) The state department of health.**
- (4) The office of the state chemist.**
- (5) The office of the state fire marshal.**

**(b) The standards established in this rule shall be used for the following purposes:**

- (1) To establish minimum compliance levels for ground water quality monitoring at regulated facilities.**



- (2) To ban the discharge of effluents into potable ground water.
- (3) To establish health protection goals for untreated water in water supply wells.
- (4) To establish concentration limits for contaminants in ambient ground water.

(c) An agency shall use its regulatory authority when adopting rules to ensure the criteria established in this rule will not be exceeded in ground water at or beyond the boundary of a ground water management zone established according to section 9 of this rule. When adopting rules, an agency may, to the extent consistent with its regulatory authority, apply preventative action levels, design standards, a monitoring framework, or other regulatory methods to ensure that facilities, practices, and activities are designed and managed to eliminate or minimize potential adverse impacts to the existing ground water quality.

(d) The standards established in this rule shall not limit nor expand the authority of an agency.

(e) The standards established in this rule shall allow, as appropriate, ground water remediations to be consistent with the remediation objectives set forth in IC 13-25-5-8.5.

(f) For programs under the jurisdiction of the department of environmental management, the commissioner may, if requested in writing, provide the requesting party an assessment of the party's responsibilities at a particular site with respect to this rule. The assessment shall be based on the information available to the commissioner at the time of the request and may include an evaluation of the following factors:

- (1) Department of environmental management regulatory requirements not contained in this rule.
- (2) Existing ground water quality.
- (3) The type, quantity, and source of any contamination found at a site.

*(Water Pollution Control Board; 327 IAC 2-11-2)*

### **327 IAC 2-11-3 Definitions**

**Authority:** IC 13-18-3-1; IC 13-18-4-1; IC 13-18-4-3; IC 13-18-4-4; IC 13-18-4-5; IC 13-18-17-5

**Affected:** IC 13-11-2-71; IC 13-18-4; IC 13-18-17; IC 14-34

**Sec. 3. The following definitions apply throughout this rule:**

- (1) "Agency" means one (1) or more of the following:
  - (A) Department of environmental management.
  - (B) Department of natural resources.
  - (C) State department of health.
  - (D) Office of the state chemist.
  - (E) Office of the state fire marshal.
- (2) "Commissioner" means the commissioner of the department of environmental management.
- (3) "Contaminant" means any solid, semi-solid, liquid, or gaseous matter, or any odor, radioactive material, pollutant (as defined by the federal Water Pollution Control Act (33 U.S.C. 1362(6)), as amended on December 16, 1996)\*, hazardous waste (as defined in the federal Solid Waste Disposal Act (42 U.S.C. 6903(5)), as amended on March 26, 1996)\*\*, any constituent of a hazardous waste, or any combination of the items described in this subdivision, from whatever source, that:
  - (A) is injurious to human health, plant or animal life, or property;

- (B) interferes unreasonably with the enjoyment of life or property; or
- (C) otherwise violates:
  - (i) environmental management laws; or
  - (ii) rules adopted under environmental management laws.
- (4) “Criterion” means a numeric value or a narrative statement established to maintain and protect the quality of ground water.
- (5) “Drinking water well” means a bored, drilled, or driven shaft or a dug hole that meets the following:
  - (A) Supplies ground water for human consumption.
  - (B) Has a depth greater than its largest surface dimension.
  - (C) Is not permanently abandoned in accordance with 310 IAC 16-10-2.
- (6) “Environmental management laws” has the meaning set forth in IC 13-11-2-71.
- (7) “Ground water” means water located below the ground surface in interconnected voids and pore spaces in the zone of saturation.
- (8) “Ground water management zone” means a three (3) dimensional region of ground water around a potential or existing contaminant source where a contaminant is or was managed to prevent or mitigate deterioration of ground water quality such that the criteria established in this rule are met.
- (9) “Naturally occurring concentration” means a constituent concentration in ground water that is not attributable to human activity.
- (10) “Property boundary” means the edge of a contiguous parcel of land owned or leased by a common owner or lessee. Contiguous land shall include land separated by a public right-of-way, if that land would otherwise be contiguous.
- (11) “Standards”, when used without qualification, means:
  - (A) the numeric and narrative criteria;
  - (B) the classification plan; and
  - (C) the method of determining where the criteria must apply; established by this rule.
- (12) “Surface water quality standards” means the water quality standards established in 327 IAC 2-1 and 327 IAC 2-1.5.

**\*33 U.S.C. 1362(6) is incorporated by reference. Copies of this publication may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 or from the Indiana Department of Environmental Management, Office of Water Management, Indiana Government Center-North, 100 North Senate Avenue, Room 1255, Indianapolis, Indiana 46206.**

**\*\*42 U.S.C. 6903(5) is incorporated by reference. Copies of this publication may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 or from the Indiana Department of Environmental Management, Office of Water Management, Indiana Government Center-North, 100 North Senate Avenue, Room 1255, Indianapolis, Indiana 46206. (*Water Pollution Control Board; 327 IAC 2-11-3*)**

#### **327 IAC 2-11-4 Ground water classification plan**

**Authority: IC 13-18-3-1; IC 13-18-4-1; IC 13-18-4-3; IC 13-18-4-4; IC 13-18-4-5; IC 13-18-17-5**  
**Affected: IC 13-11-2-82; IC 13-18-4; IC 13-18-17**

**Sec. 4. (a) All ground water shall be classified for purposes of determining the appropriate narrative and numeric criteria and level of protection to be applied to the ground**

**water. All ground water is drinking water class ground water unless:**

- (1) it is classified as naturally limited ground water under subsection (b) or (c); or**
- (2) it is classified as impaired drinking water class ground water under subsection (d).**

**(b) Ground water is naturally limited under this rule if it is in accordance with one (1) of the following conditions:**

- (1) Contains hydrocarbons that are producible considering their quantity and location, as has been demonstrated to an agency.**
- (2) Located in the injection zone of or within the physical influence of a Class I, II, or III injection well operating under a valid underground injection control permit issued under the Safe Drinking Water Act and its implementing regulations.**
- (3) Located in a zone within the physical influence of a gas storage well operating under a valid permit issued under IC 14-37.**

**(c) Ground water is naturally limited under this rule if it is in accordance with one (1) of the following conditions:**

- (1) Located within an area of probable cumulative impact on the hydrologic balance, as determined by the department of natural resources pursuant to IC 14-34-4-7(a)(3)(A), for a coal mine that has been fully released from the performance bond required by IC 14-34-6.**
- (2) Located in the zone of influence of a coal mine area mined prior to August 4, 1977.**

**(d) The commissioner may classify ground water as naturally limited class ground water if a person requesting classification demonstrates, in a written submission, that the following conditions are met:**

- (1) The ground water requested to be classified is as follows:**

- (A) Described in three (3) dimensions.**

- (B) Limited in one (1) of the following ways:**

- (i) The potential ground water yield is less than two hundred (200) gallons per day.**

- (ii) The naturally occurring total dissolved solids (TDS) concentration is greater than or equal to ten thousand (10,000) milligrams per liter (mg/l).**

- (C) Not currently used nor reasonably expected to be used for drinking water in the future, including the combined use of multiple low yield water bearing zones.**

- (D) Not in a state approved wellhead protection area pursuant to 327 IAC 8-4.1.**

- (2) Notification, using certified mail, was given, at least forty-five (45) days prior to the submission of the request, to the following:**

- (A) An owner and, if one exists, a lessee of property within or adjacent to the land area above the ground water requested to be classified.**

- (B) Any person reasonably expected to be aggrieved or adversely affected by the classification.**

- (C) City and county health officers having jurisdiction within the land area above the ground water requested to be classified.**

**(e) The commissioner may classify ground water as impaired drinking water class ground water if it has one (1) or more contaminant concentrations above the numeric criteria established in section 6(a) of this rule and the person requesting classification demonstrates to the commissioner's satisfaction, in a written submission, that the following conditions are**

met:

- (1) The ground water requested to be classified is as follows:
  - (A) Described, to the commissioner's satisfaction, in a hydrogeologic report that shall, at a minimum, contain the following:
    - (i) A three (3) dimensional description of ground water flow and direction.
    - (ii) A description of each contaminant that exceeds the criteria established in section 6(a) of this rule.
    - (iii) A map indicating the property or properties overlying the ground water requested to be classified.
  - (B) Not currently used nor reasonably expected to be used for drinking water in the future unless the following apply:
    - (i) The ground water is treated to remove the contaminant concentration to less than the numeric criterion established in section 6(a).
    - (ii) A mechanism is in place to prevent untreated ground water from being used as drinking water for as long as a contaminant concentration is above the numeric criterion established in section 6(a) of this rule.
  - (C) Not in a state approved wellhead protection area pursuant to 327 IAC 8-4.1.
- (2) Notification, using certified mail, was given, at least forty-five (45) days prior to the submission of the request, to the following:
  - (A) An owner and, if one exists, a lessee of property within or adjacent to the land area above the ground water requested to be classified.
  - (B) The following city and county positions having jurisdiction within the land area above the ground water requested to be classified:
    - (i) Government officials.
    - (ii) Planners.
    - (iii) Health officers.
  - (C) Any person reasonably expected to be aggrieved or adversely affected by the classification.

(f) The commissioner may deny a request to classify ground water as impaired if the exceedance of the numeric criterion established in section 6(a) of this rule was caused by an unlawful action of the person seeking the classification. Notwithstanding the impaired ground water classification, a facility, practice, or activity located within the land area above the ground water classified as impaired must comply with all otherwise applicable laws, rules, and standards.

(g) The commissioner may reevaluate a ground water classification determination upon the receipt of new or additional information pertaining to a classification requirement. (*Water Pollution Control Board; 327 IAC 2-11-4*)

#### **327 IAC 2-11-5 Criteria for all ground water**

**Authority:** IC 13-18-3-1; IC 13-18-4-1; IC 13-18-4-3; IC 13-18-4-4; IC 13-18-4-5;  
IC 13-18-17-5  
**Affected:** IC 13-18-4; IC 13-18-17

**Sec. 5.** Each class of ground water described in section 4 of this rule shall meet the following protective criteria:

- (1) Ground water quality shall be maintained, at a minimum, to protect the existing and reasonably expected future use of the ground water.

(2) Ground water shall be maintained and protected to ensure that a contaminant concentration attributable to human activity does not increase in a drinking water well.

(3) For waters of the state, surface water quality standards shall be met in the surface water at the ground water—surface water interface.

(4) In addition to the standards established in this rule, water designated by the commissioner to be surface water must comply with surface water quality standards.

(Water Pollution Control Board; 327 IAC 2-11-5)

**327 IAC 2-11-6 Criteria for drinking water class ground water**

Authority: IC 13-18-3-1; IC 13-18-4-1; IC 13-18-4-3; IC 13-18-4-4; IC 13-18-4-5;  
IC 13-18-17-5

Affected: IC 13-18-4; IC 13-18-17

Sec. 6. (a) The following numeric criteria are health protective goals for untreated ground water used as drinking water, and they establish the maximum permissible level of a contaminant in drinking water class ground water. These criteria apply to drinking water class ground water at and beyond the boundary of the ground water management zone established according to section 9 of this rule:

**(1) Numeric criteria for select inorganic contaminants:**

<b>Table 6(a)(1)</b> <b>Numeric Criteria for Inorganic Contaminants</b> <b>in Drinking Water Class Ground Water</b>		
<b>Chemical Abstract Registry Numbers</b>	<b>Contaminant</b>	<b>Criterion (mg/l unless noted)<sup>1</sup></b>
7440-36-0	Antimony	0.006
7440-38-2	Arsenic	0.05
1332-21-4	Asbestos	7 MFL <sup>2</sup>
7440-39-3	Barium	2
7440-41-7	Beryllium	0.004
7440-43-9	Cadmium	0.005
7440-47-3	Chromium (total)	0.1
**	Combined beta/photon emitters	4 mrem/yr <sup>3</sup>
57-12-5	Cyanide (free)	0.2
16984-48-8	Fluoride	4
**	Gross alpha particle activity (including radium 226 but excluding radon and uranium)	15 pCi/L <sup>4</sup>
7439-92-1	Lead	0.015
7439-97-6	Mercury (inorganic)	0.002
14797-65-0	Nitrate (as N)	10

<b>Table 6(a)(1)</b> <b>Numeric Criteria for Inorganic Contaminants</b> <b>in Drinking Water Class Ground Water</b>		
<b>Chemical Abstract Registry Numbers</b>	<b>Contaminant</b>	<b>Criterion (mg/l unless noted)<sup>1</sup></b>
14797-55-8	Nitrite (as N)	1
**	Radium 226 and 228 (combined)	5 pCi/L
7782-49-2	Selenium	0.05
7440-28-0	Thallium	0.002
Notes: ** No Chemical Abstract Service Number exists for this contaminant. 1. mg/l is milligrams per liter. 2. MFL is million fibers per liter greater than 10 micrometers in length. 3. mrem/yr is millirems per year. 4. pCi/L is picocuries per liter.		

(2) Numeric criteria for select organic contaminants:

<b>Table 6(a)(2)</b> <b>Numeric Criteria for Organic Contaminants</b> <b>in Drinking Water Class Ground Water</b>		
<b>Chemical Abstract Registry Numbers</b>	<b>Contaminant</b>	<b>Criterion (mg/L unless noted)</b>
15972-60-8	Alachlor	0.002
1912-24-9	Atrazine	0.003
71-43-2	Benzene	0.005
50-32-8	Benzo(a)pyrene	0.0002
1563-66-2	Carbofuran	0.04
56-23-5	Carbon tetrachloride	0.005
57-74-9	Chlordane	0.002
94-75-7	2,4-D	0.07
75-99-0	Dalapon	0.2
103-23-1	Di(2-ethylhexyl)adipate	0.4
96-12-8	Dibromochloropropane (DBCP)	0.0002
95-50-1	Dichlorobenzene, 1,2-	0.6
106-46-7	Dichlorobenzene, 1,4-	0.075
107-06-2	Dichloroethane, 1,2-	0.005

<b>Table 6(a)(2)</b> <b>Numeric Criteria for Organic Contaminants</b> <b>in Drinking Water Class Ground Water</b>		
<b>Chemical Abstract Registry Numbers</b>	<b>Contaminant</b>	<b>Criterion (mg/L unless noted)</b>
75-35-4	Dichloroethylene, 1,1-	0.007
156-59-2	Dichloroethylene, cis-1,2-	0.07
156-60-5	Dichloroethylene, trans-1,2-	0.1
75-09-2	Dichloromethane or Methylene chloride	0.005
78-87-5	Dichloropropane, 1,2-	0.005
117-81-7	Di(2-ethylhexyl)phthalate	0.006
88-85-7	Dinoseb	0.007
85-00-7	Diquat	0.02
145-73-3	Endothall	0.1
72-20-8	Endrin	0.002
100-41-4	Ethylbenzene	0.7
106-93-4	Ethylene dibromide (EDB)	0.00005
1071-83-6	Glyphosate	0.7
76-44-8	Heptachlor	0.0004
1024-57-3	Heptachlor epoxide	0.0002
118-74-1	Hexachlorobenzene	0.001
77-47-4	Hexachlorocyclopentadiene	0.05
58-89-9	Lindane (gamma-BHC)	0.0002
72-43-5	Methoxychlor	0.04
108-90-7	Monochlorobenzene	0.1
23135-22-0	Oxamyl (Vydate)	0.2
87-89-5	Pentachlorophenol	0.001
1918-02-1	Picloram	0.5
1336-36-3	Polychlorinated biphenyls (PCBs)	0.0005
122-34-9	Simazine	0.004
100-42-5	Styrene	0.1

<b>Table 6(a)(2)</b> <b>Numeric Criteria for Organic Contaminants</b> <b>in Drinking Water Class Ground Water</b>		
<b>Chemical Abstract Registry Numbers</b>	<b>Contaminant</b>	<b>Criterion (mg/L unless noted)</b>
1746-01-6	2,3,7,8-TCDD (Dioxin)	0.00000003
127-18-4	Tetrachloroethylene	0.005
108-88-3	Toluene	1
8001-35-2	Toxaphene	0.003
93-72-1	2,4,5-TP (Silvex)	0.05
120-82-1	Trichlorobenzene, 1,2,4-	0.07
71-55-6	Trichloroethane, 1,1,1-	0.2
79-00-5	Trichloroethane, 1,1,2-	0.005
79-01-6	Trichloroethylene	0.005
75-01-4	Vinyl chloride	0.002
1330-20-7	Xylenes (total)	10

(b) A facility, practice, or activity shall not cause the following health protective goal levels to be exceeded in a drinking water well:

- (1) Chloride at two hundred fifty (250) mg/l.
- (2) Sulfate at two hundred fifty (250) mg/l.
- (3) Total dissolved solids at five hundred (500) mg/l.
- (4) Total coliform bacteria at non-detect.

(c) An agency shall determine if further action is necessary to comply with the narrative criteria established in section 5 of this rule if the following indicator levels are exceeded in drinking water class ground water:

- (1) Chloride at two hundred fifty (250) mg/l.
- (2) Sulfate at two hundred fifty (250) mg/l.
- (3) Total dissolved solids at five hundred (500) mg/l.
- (4) Total coliform bacteria at non-detect.

(d) If the commissioner determines that a numeric criterion for a contaminant without a drinking water class numeric criterion established in subsection(a) is necessary, a risk analysis shall be used to establish a numeric criterion for that contaminant and must:

- (1) receive approval from the commissioner; and
- (2) be based upon appropriate toxicological data.

(e) The naturally occurring concentration of a contaminant in drinking water class



ground water shall be the numeric criterion if that contaminant occurs at a concentration greater than the drinking water numeric criterion established in this section.

(f) If drinking water class ground water at a facility, practice, or activity is determined to have one (1) or more contaminant concentrations above the numeric criteria established in this section that are not the result of the facility, practice, or activity under consideration, an agency shall manage the facility, practice, or activity or implement programs such that:

(1) the facility, practice, or activity causes no further increase in the concentration of the contaminant determined to be above the numeric criterion established in this section; and

(2) any design standard or management requirements that apply to the facility, practice, or activity are as stringent as the design standard and management requirements that would be applied to a facility, practice, or activity where ground water does not have one (1) or more contaminant concentrations above the numeric criteria established in this section.

(g) The commissioner may, for a ground water contamination assessment or remediation at a facility, practice, or activity under the jurisdiction of the department of environmental management, allow an appropriate site specific, risk based numeric criterion different from the numeric criterion established in subsection (a) to be applied to drinking water class ground water within the boundary of the ground water management zone established according to section 9 of this rule. (*Water Pollution Control Board; 327 IAC 2-11-6*)

#### **327 IAC 2-11-7 Criteria for naturally limited class ground water**

Authority: IC 13-18-3-1; IC 13-18-4-1; IC 13-18-4-3; IC 13-18-4-4; IC 13-18-4-5;  
IC 13-18-17-5

Affected: IC 13-18-4; IC 13-18-17

Sec. 7. (a) Naturally limited ground water, classified according to section 4 (b) of this rule, shall comply with the narrative criteria established in section 5 of this rule.

(b) Naturally limited class ground water, classified according to section 4(c) of this rule, shall meet the following requirements:

(1) Numeric criteria established in this subsection shall be met at and beyond the boundary of the ground water management zone established according to section 9 of this rule.

(2) A contaminant attributable to activities associated with coal mining shall meet one (1) of the following:

(A) The existing contaminant concentration if it is greater than the numeric criterion established in section 6(a).

(B) The numeric criterion established in section 6(a) of this rule if it is not greater than the numeric criterion established in section 6(a).

(3) A contaminant not attributable to activities associated with coal mining, including a contaminant attributable to an activity regulated under 310 IAC 12-3-93.1, if the contaminant concentration exceeds the concentration attributable to a coal mining

activity, shall meet the numeric criterion established in section 6(a) of this rule.

(c) Naturally limited class ground water, classified according to section 4(d) of this rule, shall meet the following requirements:

(1) Numeric criteria established in this subsection shall be met at and beyond the boundary of the ground water management zone established according to section 9 of this rule.

(2) A contaminant with a drinking water class numeric criterion established in section 6(a) of this rule shall have a criterion determined by one (1) of the following:

(A) A risk analysis used to determine the criterion for a contaminant if the analysis:

(i) has received approval from the commissioner; and

(ii) is based on appropriate toxicological data.

(B) A default of ten (10) times the drinking water class numeric criterion established in section 6(a) of this rule.

(3) If the commissioner determines that a numeric criterion for a contaminant without a drinking water class numeric criterion established in subsection 6(a) of this rule is necessary, the contaminant shall have a criterion determined according to subdivision (2)(A).

(4) The naturally occurring concentration of a contaminant in naturally limited class ground water shall be the numeric criterion if that contaminant occurs at a concentration greater than the naturally limited numeric criterion established in this subsection.

(5) If naturally limited class ground water at a facility, practice, or activity is determined to have one (1) or more contaminant concentrations above the numeric criteria established in this subsection that are not the result of the facility, practice, or activity under consideration, an agency shall manage the facility, practice, or activity or implement programs such that:

(A) the facility, practice, or activity causes no further increase in the concentration of the contaminant determined to be above the numeric criterion established in this subsection; and

(B) any design standard or management requirements that apply to the facility, practice, or activity are as stringent as the design standard and management requirements that would be applied to a facility, practice, or activity where ground water does not have one (1) or more contaminant concentrations above the numeric criteria established in this subsection.

(6) The commissioner may, for a ground water contamination assessment or remediation at a facility, practice, or activity under the jurisdiction of the department of environmental management, allow an appropriate site specific, risk based numeric criterion different from the numeric criterion established in this subsection to be applied to naturally limited class ground water within the boundary of the ground water management zone established according to section 9 of this rule.

*(Water Pollution Control Board; 327 IAC 2-11-7)*

### **327 IAC 2-11-8 Criteria for impaired drinking water class ground water**

**Authority:** IC 13-18-3-1; IC 13-18-4-1; IC 13-18-4-3; IC 13-18-4-4; IC 13-18-4-5;  
IC 13-18-17-5  
**Affected:** IC 13-18-4; IC 13-18-17

**Sec. 8. Impaired drinking water class ground water, classified according to section 4(e) of this rule, shall meet the following requirements:**

**(1) Numeric criteria established in this section shall be met at and beyond the boundary of the ground water management zone established according to section 9 of this rule.**

**(2) A contaminant not identified in the classification as being in excess of the numeric criterion of section 6(a) or 6(e) of this rule shall meet one (1) of the following:**

**(A) The numeric criterion established in section 6(a) or 6(e) of this rule.**

**(B) The numeric criterion established by conducting a risk analysis that:**

**(i) uses site specific factors;**

**(ii) is based on appropriate toxicological data; and**

**(iii) has received approval by the commissioner.**

**(3) A contaminant identified in the classification as being in excess of the numeric criterion established in section 6(a) or 6(e) of this rule shall meet one (1) of the following:**

**(A) The existing contaminant concentration if it is greater than the numeric criterion established in section 6(a) or 6(e) and results from a source of contamination that:**

**(i) was from a previously unregulated facility, practice, or activity;**

**(ii) was discovered after those who caused the contamination abandoned the site and those who caused the contamination cannot be found; or**

**(iii) cannot be identified due to the nature of the specific constituent.**

**(B) The numeric criterion established by conducting a risk analysis that:**

**(i) uses site specific factors;**

**(ii) is based on appropriate toxicological data; and**

**(iii) has received approval by the commissioner.**

**(4) Any design standard or management requirements that apply to a facility, practice, or activity with impaired class ground water must be as stringent as the design standard and management requirements that would be applied to a facility, practice, or activity with drinking water class ground water.**

*(Water Pollution Control Board; 327 IAC 2-11-8)*

**327 IAC 2-11-9 Ground water management zones**

**Authority:** IC 13-18-3-1; IC 13-18-4-1; IC 13-18-4-3; IC 13-18-4-4; IC 13-18-4-5;  
IC 13-18-17-5  
**Affected:** IC 13-18-4; IC 13-18-17

**Sec. 9. (a) The criteria established in this rule must be met at and beyond the boundary of the ground water management zone.**

**(b) The agency with jurisdiction over a facility, practice, or activity shall determine the**

location of the boundary and the duration of the ground water management zone. Once an agency has established a ground water management zone for a facility, practice, or activity under its jurisdiction, that ground water management zone shall apply in every instance to the facility, practice, or activity in the manner and for the duration specified by the agency.

(c) An agency, having jurisdiction over a facility, practice, or activity that is subject to the criteria of this rule, may establish an appropriate program specific or site specific ground water management zone considering the following factors:

- (1) Regulatory program requirements.
- (2) Design standards.
- (3) Monitoring frameworks.
- (4) Hydrogeologic conditions.
- (5) Risks of human exposure.
- (6) Impacts to any natural resource and the environment.
- (7) Property controls.

(d) An agency, having jurisdiction over a ground water contamination assessment or remediation, may establish an appropriate program specific or site specific ground water management zone considering the following factors:

- (1) Regulatory program requirements.
- (2) Type and amount of a contaminant present.
- (3) Monitoring frameworks.
- (4) Hydrogeologic conditions.
- (5) Risks of human exposure.
- (6) Impacts to any natural resource and the environment.
- (7) Property controls.

(e) A default ground water management zone shall apply if an agency having jurisdiction over a facility, practice, activity, or a ground water contamination assessment or remediation has not established a program specific or site specific ground water management zone under subsection (b) or (c). The boundary of the default ground water management zone shall be located in accordance with one (1) of the following:

- (1) At each drinking water well that is:
  - (A) within three hundred (300) feet from the edge of a potential or existing contaminant source when the property boundary is greater than three hundred (300) feet from the edge of a potential or existing contaminant source; or
  - (B) within the property boundary when the property boundary is less than three hundred (300) feet from the edge of a potential or existing contaminant source.
- (2) The property boundary, when the property boundary is less than three hundred (300) feet from the edge of a potential or existing contaminant source, and there is no drinking water well within the property boundary.
- (3) Three hundred (300) feet from the edge of a potential or existing contaminant source when the property boundary is greater than three hundred (300) feet from the edge of a potential or existing contaminant source and there is no drinking water well within three hundred (300) feet from the edge of a potential or existing contaminant

source.

**(f) If overlapping ground water management zone boundaries are present at a facility, practice, or activity, an agency may combine them.** (*Water Pollution Control Board; 327 IAC 2-11-9*)

SECTION 2. THE FOLLOWING ARE REPEALED: 327 IAC 2-1-7; 327 IAC 2-1.5-9.

### **Notice of Public Hearing**

*These rules are not scheduled for hearing at this time. When the public hearing is scheduled, it will be noticed in the Change in Notice section of the Indiana Register.*

*Additional information regarding this action may be obtained from MaryAnn Stevens, Rules Section of the Office of Water Management, (317) 232-8635, or (800) 451-6027 (in Indiana).*

*Copies of these rules are now on file at the Office of Water Management, Indiana Department of Environmental Management, Indiana Government Center-North, 100 North Senate Avenue, Room 1255, Indianapolis, Indiana and Legislative Services Agency, Indiana Government Center-South, 302 West Washington Street, Room E011, Indianapolis, Indiana and are open for public inspection.*

Matthew C. Rueff  
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